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Did They Jump or Were They Pushed? The Exit of Older Men from the London Labor Market, 1929–1931

DUDLEY BAINES AND PAUL JOHNSON

We examine the income of older men in London around 1930, based on a large sample. The income of nonworking older men was substantially below that of men still working. We find no evidence that retirement rates increased at the state-pensionable age—unsurprisingly, since pension payments provided less than a poverty-line income. Less demanding or part-time work was unavailable. Hence we conclude that the decision of older manual workers to leave the labor market was determined primarily by the *absence* of appropriate employment opportunities, rather than the *presence* of substantial assets or nonlabor income.

This article examines the reasons why older men left the London labor force in the early 1930s. In Britain, as in other industrialized countries, the interwar period seems to have marked a change of employment regime for older men. Before the First World War, participation rates for men aged 65 and over were high; between 60 and 70 percent in Britain, France, and the United States, and over 50 percent in Germany, according to census data. These rates appear to have been constant over the period from 1900 to 1920 in France, and to have fallen only slightly in Britain, Germany, and the United States. But the 1920s and 1930s saw an uninterrupted decline.¹

Mere identification of the interwar period as a turning point in the labor-force participation of older men does not, however, advance our understanding of the reasons for this change. In Britain the interwar years witnessed massive structural change, high levels of unemployment, considerable industrial reorganiza-

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¹ If these census data are adjusted to compensate for the secular decline in agricultural employment (in which older males workers were disproportionately concentrated), then the decline in participation rates begins after 1921 in Britain, 1925 in Germany, 1926 in France, and 1930 in the United States. Conrad, "La naissance," pp. 557, 560.

tion, expansion of the public pension system, and a rise in living standards for those in employment. Any or all of these factors may have affected the propensity of older men to participate in the labor force. The retirement decision may be thought of as a supply-side choice made by the individual worker, one which depends on the relative costs and benefits of continued economic activity compared with permanent withdrawal from the labor force. The level of labor demand will obviously affect this choice, by determining the returns to economic activity and the costs of job search for those not employed. In order to unpick the simultaneous impact of demand-side and supply-side effects on the labor-force participation of older men we would wish, ideally, to trace the labor-market history of a representative sample of workers over time. Unfortunately no representative longitudinal labor-market data exist for the United Kingdom for any period before the 1980s. Nor is there any immediate prospect of using census data retrospectively to construct longitudinal employment data; the manuscript schedules of the British census are entirely closed to researchers for 100 years, and there is no public-use sample. Previous attempts to examine the relationship between age and employment have had to rely on aggregate data from the decennial censuses and the unemployment insurance system. Most of the underlying data in these sources are presented as crude single-variable tabulations. Hence it is not possible to evaluate the marginal impact of different factors on the propensity to withdraw from the workforce at a particular age.² In this article we attempt to evaluate the relative impact of demand-side and supply-side factors on the propensity of older men to withdraw from the workforce by making use of a newly computerized survey of 26,915 metropolitan households that was carried out between 1929 and 1932 for the *New Survey of London Life and Labour* (hereafter NSLL).

Cross-sectional surveys are far from ideal instruments with which to examine this process. However, the wealth of detail in the NSLL, including individual information on age, employment status, occupation, earnings, nonlabor income, and household structure, enables us to formulate and test a number of hypotheses about demand- and supply-side influences on labor-force withdrawal. The impact of demand- and supply-side forces on the economic activity of older men is our primary concern here. Before undertaking this analysis, we shall present some information on the household survey from which we derive most of our empirical evidence, and assess the reliability and representativeness of that data.

THE NEW SURVEY OF LONDON LIFE AND LABOUR

The NSLL was the largest and most comprehensive social survey undertaken in Britain before the Second World War.³ It was designed to follow up

² For example Thomas, "Labour Market"; and Johnson, "Employment."

³ Llewellyn-Smith, *New Survey*.

the pioneering investigations undertaken by Charles Booth in the late 1880s. The primary purpose of both surveys was to estimate the extent and causes of poverty in London.⁴ The *NSLLL* involved a detailed house-to-house enquiry undertaken between 1929 and 1932, during which information was collected on 28,100 working-class households containing 98,400 individuals, out of which data concerning 26,915 households and 94,137 individuals have survived.⁵ This was about 2 percent of the working-class population of 38 London boroughs. Considerable care was taken to obtain the fullest possible responses from each household about demographic structure, occupation, earnings, nonlabor income, and birthplace of each member.

Very little of the *NSLLL* household data were analyzed by the original team.⁶ All the social surveys of the time shared a low ratio of analysis to data since, in a world without computers, tabulation capacity was limited. The *NSLLL* is unique, however, in that it is the only British survey before the Second World War that survives (almost) in its entirety: the original household survey cards are held in the British Library of Political and Economic Science—the London School of Economics library—and they have now been fully computerized.⁷

The selection bias of the *NSLLL* sample must be noted. Only working-class households, as defined by the occupation of the main wage earner, were included. Households within the sampling frame in which the main earner was not deemed working-class were ignored.⁸ In the *NSLLL*, the household was defined effectively as all persons living at one address. Persons defined as "spinster" or "widow" were included; and there was only one "head," even in a three-generation family.⁹ The original survey included lodgers as members of the household if they received board. We have excluded them—that is, we count lodgers as separate households—on the

⁴ Booth, *Life and Labour*. The development of the social survey is discussed in Bulmer, Bales, and Sklar, *Social Survey*.

⁵ The cards for the outer London boroughs of Walthamstow and Tottenham, although used for the published volumes, have been lost.

⁶ The sample data were referred to in only two of the nine published volumes, and then only in aggregated form.

⁷ The entire content of each card has been computerized and additional coding of occupations, birthplaces, and location of employer has been undertaken. Full details of the project, including the quality of the sample, are given in Baines, *Computerisation*. The *NSLLL* data set has been deposited at the ESRC Data Archive, University of Essex, file number SN3758.

⁸ "Working-class" was defined by exclusion, the main criterion being occupation. Hence, for example, police inspectors were excluded but police sergeants included. Most "employers and managers" and "proprietors" were also excluded. If in doubt, as for example in the case of the self-employed, the investigators were instructed to include only those household heads whose annual income was less than £250, this being the upper income threshold for National Insurance contributions. Investigators were also instructed to exclude those households in which the householder was working-class but other members were not.

⁹ Despite instructions to the contrary, the oldest married man or widower was usually designated as head, a fact which yields some advantage for the purposes of this article.

grounds that their earnings did not constitute part of household income. However, the rent and board paid by lodgers are counted as part of the income of the primary household at that address. Earnings in the *NSLLL* were attributed to individuals, but nonlabor income, including pensions, was attributed to the household as a whole. The *NSLLL* distinguished "earners" (that is, the "employed" population) from "nonearners." Those "earners" with actual earnings were asked to state their earnings in the previous week. Nonlabor household income, such as pensions, rent, unemployment, and Poor Law benefits, was also detailed in full. Finally, the sample excluded the population living in institutions. This was 0.3 percent of the total population, but 6 percent of those aged over 65.¹⁰ In common with those in receipt of outdoor relief, these were likely to be amongst the poorest people in the population. For example, people living in Poor Law institutions had, by definition, virtually no assets.

Before using the *NSLLL* data, we need to confirm that the labor-force characteristics of the sample were representative of the London population from which it was drawn. In theory, there should be a close correspondence between *NSLLL* participation rates and those revealed by the 1931 census, although the absence of nonmanual workers from the *NSLLL* means that the relationship will not be exact. Unfortunately, in the 1931 census age-specific occupational data for adults were reported only at the national level, so no direct comparison of sample and census age-specific participation rates can be made. Moreover, the participation rate in London may have differed from the national rate because of regional differences in either the overall occupational structure, or in the age-specific propensity to work. We can allow for the potential effect of regional differences in occupational structure by assuming that the proportion of elderly to total workers in each of the 31 occupational groups in the census was the same in London as at the national level. This produces estimates of age-specific participation rates for London in 1931 which take account of the fact that the occupational structure of London was significantly different from that of England and Wales. The reliability of this procedure can be assessed by considering data from the 1921 census, which reported age-specific occupational information for both London and for England and Wales. For 1921, therefore, we can apply the same adjustment method used for 1931, and compare the estimated age-specific participation rates for London with the actual rates. Table 1 reports these data. For 1921 the estimated age-specific participation rates for London are all within 2.3 percent of the actual and within 2.3 percent of the rates for England and Wales (columns 1, 2, and 3); for 1931 (columns 4 and 5) the estimated rate for London is within 2.2 percent of the rate for England and Wales. This exercise reveals that the age-specific participation rates of older

¹⁰ Gordon, "Familial Support," pp. 292-93.

TABLE 1
ALTERNATIVE MEASURES OF LABOR-FORCE PARTICIPATION RATES OF OLDER MEN,
1921 AND 1931

Age Group	1921			1931	
	England and Wales (census) (1)	London (census) (2)	London (estimated) (3)	England and Wales (census) (4)	London (estimated) (5)
60-64	88.7	88.7	86.4	87.2	88.1
65-69	79.4	79.1	79.2	64.9	67.1
70-74	—	—	—	41.7	43.2
60 and up	69.9	70.3	69.9	62.5	64.6
65 and up	58.4	58.2	59.1	47.5	49.4
70 and up	40.5	39.9	41.3	33.0	34.4
75 and up	—	—	—	22.8	23.9

Sources: United Kingdom, *Census of England and Wales, 1921*, and *Census of England and Wales, 1931*.

men in London and in England and Wales as a whole were similar, despite pronounced differences between the national and metropolitan occupational structures (London, for instance, had only 0.2 percent of male workers in mining and textiles, compared with 9.6 percent in England and Wales). Table 1 also confirms that census participation rates were stable for the group aged 60 to 64 between 1921 and 1931, but fell for men aged 65 and above, both nationally and in London.

Table 2 compares the census participation rates with data from the *NSLL*. The manner in which questions about occupation were asked in the census and in the *NSLL* may have produced different responses. The census invited all adults to denominate their occupation, or to explicitly state that they had retired from their previous gainful occupation. Unemployed and casual workers were recorded in the census as occupied, as were all adults who could report a previous occupation, and who had not yet resolved to declare themselves to be fully retired from the labor market. The *NSLL*, on the other hand, categorized respondents by one of seven different employment states: "not in labor force," "employed," "self-employed," "unemployed," "sick/incapacitated," "on strike," and "unknown/other." In addition it asked for details of the employer and place of employment, and for earnings last week and in a "normal" week. The *NSLL* was, therefore, both more precise and more demanding in its requirements than was the census. This could affect the declared labor-market status of older, marginal workers in particular. It is probable that some older men who were no longer employed and who would not work again reported themselves in the census as having an occupation, since at the time of the census they had not accepted that their nonemployed status was permanent. This was certainly true in Liverpool, for

TABLE 2
ALTERNATIVE MEASURES OF LABOR-FORCE PARTICIPATION RATES OF OLDER MEN,
1931

Age Group	Census of England and Wales (%)	Estimate for London (%)	NSLLL Sample			
			in Labor Force (%)	with Earnings (%)	Unemployed (%)	Number in Age Group
60-64	87.2	88.1	89.0	67.1	12.0	1,196
65 and up	47.5	49.4	38.3	27.8	3.5	1,859
65-69	64.9	67.1	57.6	42.6	6.1	819
70-74	41.7	43.2	30.1	21.6	2.1	621
75 and up	22.8	23.9	12.6	8.1	0.5	419

Sources: NSLLL dataset; and Table 1.

example, where a 1932 survey of dock laborers found that "most of those over sixty-five who described themselves as 'earners' are ready to work an occasional day or two from time to time, though they might more accurately be described as 'retired'."¹¹ In the NSLLL, however, if respondents could not name an employer and a place of work, and could not report a "normal" wage, then they were designated as "not in labor force."

The first row of Table 2 shows that, for males aged 60 to 64, the proportion of NSLLL respondents declaring themselves to be in the labor force (that is, in any employment status except "not in labor force") was only marginally (0.9 percent) higher than the participation rate for this age group recorded in the census. The similarity between census and NSLLL estimates of the economically active fraction of the population is not confined to this age group. The participation rate for prime-age males (21 to 64) in England and Wales in the 1931 census was 96.7 percent, and of the more than 20,000 NSLLL males in this age range, 98.3 percent reported themselves to be in the labor force. This confirms that the NSLLL concept of labor-force participation matches closely the census definition of "occupied." It also indicates that the compositional difference between the solely working-class NSLLL survey, and the census, which included all classes, had no significant effect on the reported participation rates of prime-age males.

On the other hand, this close correspondence does not hold for men aged 65 and above. The NSLLL estimate of economic activity for this age group lies significantly below the census estimate. For the 65-and-over population as a whole, the NSLLL participation rate is 11 percentage points below the census figure (38.3 versus 49.4 percent). We believe that the census definition of economic activity is so loose that census data will provide only an upper-bound estimate for the true participation rate of older men. The NSLLL data on earnings provide an unambiguous lower-bound estimate,

¹¹ Jones, *Social Survey*, vol. 2, p. 131.

however, since respondents with earned income in the previous week clearly were economically active. The true level of economic participation must lie between these upper and lower bounds—between 49.4 percent and 27.8 percent for London males aged 65 and above. Information on employment status allows us to narrow this range further.

NSLLL respondents could declare themselves to be unemployed—this was a formal labor-market status that was recorded on the individual's national insurance record. Moreover, from age 65 most men qualified for a contributory pension; they could continue to register as unemployed at the local labor exchange, but they could not draw unemployment benefits in addition to their pension. For those aged 65 and over, therefore, a declaration of unemployment brought no financial advantage, and is a good indication of genuine but temporary interruption of employment. The lower-bound *NSLLL* estimate of economic activity should therefore include all those with earnings, together with those who were unemployed at the time of the survey. For males aged 65 and above this would set a lower-bound participation rate of 31.3 percent. The gap between this figure and the 38.3 percent of *NSLLL* males aged 65 and over who were recorded as being in the labor force must have been made up of men who reported themselves to be employed, self-employed, sick, or "other," but who had no earnings in the week of the survey. It cannot be determined whether these men were casual workers, or nonregistered unemployed, or whether they had in fact already withdrawn from economic activity. The plausible range of participation rates for men aged 65 and above in the *NSLLL* is therefore 31.3 to 38.3 percent, compared with a census estimate for London of 49.4 percent, and for England and Wales of 47.5 percent.

Could the participation rates of older men as recorded in the *NSLLL* have been seriously depressed, relative to the rest of the country, by the omission of middle-class respondents from the survey? The evidence suggests not. The occupational categories of workers recorded in the census cannot be mapped directly into socioeconomic classes, but three occupational sectors can be identified as primarily middle-class: sectors 23 ("Commercial, finance and insurance"), 25 ("Professional"), and 28 ("Clerks and draughtsmen"). Not surprisingly, these three sectors were significantly underrepresented in the *NSLLL* compared with the 1931 census.¹² However, while 2.83 percent of all male workers in the 1931 census were aged 65 to 69, only 1.28 percent of clerks, and 2.95 percent of commercial and financial workers were in this age range. The underenumeration of clerks in the *NSLLL* will, if anything, have imparted an upward bias to the measured size

¹² The share of London's total male workforce aged 21 and above enumerated in these occupational sectors in the *NSLLL* and the 1931 census, respectively, were sector 23, 8.71 percent and 14.28 percent; sector 25, 0.51 percent and 3.57 percent; sector 28, 1.77 percent and 10.95 percent.

of the 65-and-over workforce, while the underenumeration of commercial and financial employees will have had almost no effect on old-age participation rates. Among professionals, older workers were significantly overrepresented at the national level, with 65- to 69-year-olds comprising 3.72 percent of economically active males in sector 25; hence the underenumeration of this sector in the *NSLLL* will have biased the measurement of the older workforce downwards. However, since this sector comprised only 3.57 percent of the occupied male population in London according to the 1931 census, the impact of its underenumeration in the *NSLLL* on the measured participation rates of older workers must be small. Its maximum effect would have been to lower the reported *NSLLL* participation rate for men aged 65 to 69 by a single percentage point.¹³

The consistency of *NSLLL* and census participation rates for ages 64 and under, and their divergence for ages 65 and over, suggest to us that the 1931 census seriously overreported the level of economic activity among older men, by 10 percent or more. This may also have been true of earlier censuses, but we have no way of knowing. There was, however, no change between 1921 and 1931 censuses in the way the question concerning occupation was asked. Although we believe that the 1931 census overstates the level of older men's economic activity, there is no reason to think that the downward trend from 1921 is a statistical artifact.

DEMAND-SIDE FACTORS

The participation rates of older men in London may have been affected by unemployment, by company retirement rules, and by rapid structural transformation. There were, of course, other possible demand-side influences that affected older men, but they were either random or not associated with factors identified in the *NSLLL*, and hence remain unmeasurable. This section examines the systematic demand-side explanations.

The *NSLLL* was conducted early in the 1930s depression; we need to consider whether such extreme macroeconomic conditions could be responsible for the low participation rates of older men. High levels of unemployment were widely perceived to have the effect of pushing older workers into premature retirement because they had significantly lesser prospects of rehire than did younger workers. Using distinctly postwar terminology to characterize the interwar labor market, G. M. Beck has commented that "mass unemployment, like area-bombing, is not selective of its victims; young and old, good workers and bad, suffer when a pit or factory is shut

¹³ The underenumeration of this sector in the *NSLLL*, relative to the census, was 3.06 percent. Men aged 65 to 69 comprised 3.72 percent of sector 25, compared with 2.83 percent of the overall labor force, so were almost one-third likelier to be active in this sector than in general. The total impact of this underenumeration was 0.95 percent (3.06 percent x 0.31).

down. Re-employment, on the contrary, is selective. When trade revived the younger men were in general the first to get back to work.¹⁴ More recent analysis of the interwar period by Mark Thomas confirms that the higher unemployment rates experienced by older males in the later stages of the interwar depression were a consequence of longer duration. In addition to the duration effect, though, Thomas also finds that "older male workers were indeed more vulnerable to job separation during the early depression than their younger colleagues."¹⁵ An explanation is hard to pinpoint, but it may well have to do with longstanding beliefs about the impact of age on productivity, views which the Taylorist fashion of the day could only have accentuated.

The *NSLLL* data confirm that older workers faced a higher probability of unemployment. Age-specific unemployment in the *NSLLL*, as in Ministry of Labour data, follows a U-shaped pattern, with rates falling to a low of 4.5 percent for men aged 35 to 39, and then rising to reach 12 percent among 60- to 64-year-olds. It should be noted that the London labor market was quite buoyant relative to the national economy in 1929 and 1930, when the majority of the household survey was carried out.¹⁶ The average unemployment rate recorded in the survey for males aged 21 to 64 was 7.2 percent, slightly lower than the 8.5 percent rate among insured males in London, and considerably below the 15.0 percent for England and Wales as a whole reported by the Ministry of Labour for May 1930, the midpoint of the *NSLLL* household survey. Unemployment among the entire workforce is known to have been lower than among members of the national insurance scheme; for the period from 1929 to 1932, Charles Feinstein estimates the national unemployment rate among all workers to have been around three-quarters the rate for the insured workforce.¹⁷

The fact that the recorded unemployment rate among 65- to 69-year-olds in the *NSLLL* was only 6.1 percent, compared to 12 percent among 60- to 64-year-olds, is *prima facie* evidence that approximately 6 percent of inactive males in this age group were pushed into retirement from a state of unemployment. Hence, we might expect a positive association between the rate of labor-force withdrawal above age 65 and the rate of unemployment below this age. We can examine this possibility indirectly by treating participation rates for age groups 60 to 64 and 65 to 69 as recorded in the *NSLLL* as if they related to a single cohort that aged over a five-year period—in other words by using cross-sectional data to construct a pseudocohort. If the decline in the participation rate for any particular occupation between these two age groups is greater than that for the workforce as a whole, then this

¹⁴ Beck, *Survey*, p. 56.

¹⁵ Thomas, "Labour Market Structure," pp. 118–21.

¹⁶ The percentage of the 26,915 households surveyed in each year was 1928: 0.1, 1929: 34.9, 1930: 49.3, 1931: 13.5, 1932: 2.3.

¹⁷ Feinstein, *Statistical Tables*, table T128.

indicates an above-average rate of withdrawal. By comparing these pseudocohort withdrawal rates with reported *NSLLL* unemployment rates for the age group 55–64, we can determine whether retirement rates were relatively high in the occupations with high unemployment. Contrary to our expectations, we find that high unemployment was related to low rates of retirement, although the correlation is weak and not statistically significant (the coefficient is –0.24, or –0.11 when the sectors are weighted by their 1931 employment shares).¹⁸ This is not a very strong test, but it suggests that unemployment before age 65 was not the most important factor in determining who left the labor market from age 65.

The second potential demand-side influence on participation rates at older ages was the impact of compulsory-retirement rules. In 1936 the Ministry of Labour estimated that about 1.3 million male workers were covered by a superannuation scheme; manual workers made up less than half this total, suggesting that the coverage rate for the male manual workforce was less than 7.5 percent.¹⁹ At least 43 percent of manual workers in these superannuation schemes faced compulsory retirement at a set age—in nine cases out of ten, at age 65. Coverage was concentrated in a small number of sectors: transport accounted for more than 25 percent, with engineering, textiles, and food together accounting for another 35 percent. Leslie Hannah has suggested that large organizations were more likely to operate superannuation schemes with compulsory retirement rules; and the 1930 Census of Production shows that railway and gas companies were the largest commercial organizations in London, with averages of 5,617 and 1,394 employees per establishment.²⁰ From the male occupational data in the *NSLLL* we have identified 956 railway-company manual workers and 225 gas-production workers.²¹ The pseudocohort withdrawal rates for all railway and gas workers across groups aged 60 to 64 and 65 to 69 are 75 and 80 percent respectively, compared with 55 percent for the *NSLLL* workforce as a whole. This supports the hypothesis that manual workers in industries with a high level of superannuation coverage were disproportionately likely to retire around age 65. It should be noted, however, that railway and gas workers accounted for less than 6 percent of the *NSLLL* male workforce. Moreover, superannuation coverage was never comprehensive for the manual workforce in these

¹⁸ Due to the small number of observations in many occupational sectors, this analysis was carried out using data only for those sectors in which the number of unemployed males aged 55 to 64 exceeded 30. These sectors (numbers 7, 9, 13, 14, 15, 17, 18, 19, 22, 23, 27, 29, 30, and 31) accounted for almost 93 percent of older male workers.

¹⁹ "Schemes Providing for Pensions for Employees on Retirement from Work," United Kingdom, *Ministry of Labour Gazette*, May 1938, pp. 172–74. According to Routh, manual workers accounted for about 78 percent of the total in 1931 (*Occupation and Pay*, p. 8).

²⁰ Hannah, *Inventing Retirement*, p. 42; and U.K., *Census of Production*, pp. 148–49.

²¹ Railway manual workers are those identified by occupational codes 5910 to 6094, and gas production workers are those identified by occupational codes 9050 to 9054.

industries; casual workers, for instance, were not included. No other sectors of the London economy came close to matching the size of railway and gas companies: the average number of employees in other establishments in London was 92 for factory trades and 113 for nonfactory trades.²² It seems unlikely that superannuation coverage in London exceeded the national figure of 7.5 percent of manual workers. Hence, the impact of compulsory retirement rules on overall working-class participation rates must have been small.

It is possible that the participation of older men was affected by a further demand-side influence, the rate of employment growth in particular sectors of the London economy—in other words, by structural change. Employers in new or expanding industries may have been prejudiced against older workers as having had insufficient or inappropriate skills.²³ We cannot test for this directly since we have no continuous data for each worker. But it is possible to test for a general effect at the sectoral level by asking whether the relative growth rate of total employment in each occupational sector in London between 1921 and 1931 was related to any of three indicators for that same sector: the degree to which the share of workers aged 55 to 64 was greater or less than for the *NSLLL* sample as a whole, the unemployment rate for 55- to 64-year-old males, and the pseudocohort withdrawal rate. We hypothesize that the faster the relative growth rate, the lower would be the concentration of older workers, and the higher would be both the unemployment rate among older workers and their withdrawal rate. Looking across the 13 major occupational sectors, we find the following weighted correlation coefficients (along with the probability of the coefficient being significantly different from zero): concentration 0.45 (0.13); unemployment 0.61 (0.03); and withdrawal -0.03 (0.93). Hence, the intercensal sectoral growth rate is found to be entirely unrelated to the pseudocohort withdrawal rate, but to be positively associated with both a concentration of older workers in any particular sector and a high unemployment rate among these older workers.²⁴ Contrary to our expectations, older workers (employed and unemployed) were not underrepresented in fast-growing sectors, but they did suffer significantly higher rates of unemployment in these sectors. This may be taken as evidence of a demand-side bias against older male workers in the more dynamic sectors of the metropolitan labor market.

The conclusion that older workers were not underrepresented in expanding sectors seems to be at variance with the frequent references in the published *NSLLL* volumes to the recruitment of young male and female entrants into the expanding industries, which gives the clear impression that they

²² United Kingdom, *Census of Production*, pp. 148-49.

²³ Political and Economic Planning, *Exit*, p. 5.

²⁴ It is possible that there were individual industries in which older workers were being replaced by younger ones despite relatively low employment growth, but our analysis is confined to the sectoral level because of the limitations of sample size.

were replacing older workers. However, this issue is not discussed directly. The withdrawal of older workers is mentioned only in relation to compulsory retirement practices in a few industries, and in only one of the three *NSLLL* volumes concerned with industry. Two volumes contain no references to "retirement" or "older workers."²⁵

Taking these demand-side influences together, we find that changes in the interwar labor market are likely to have had a negative, albeit small, impact on the participation rates of older workers. Sectors in which manual workers were most likely to be covered by occupational pension schemes do appear to have had above-average withdrawal rates; and since the numbers covered by such schemes almost certainly increased between 1921 and 1931, this must have contributed to the measured decline in census participation rates between these years. However, no more than 7.5 percent of manual workers were covered by superannuation schemes in 1931, and less than half this number were subject to compulsory retirement rules. Unemployment rates were significantly higher for 60- to 64-year-olds in fast-growing sectors, but the unemployment rate of older workers by occupation in 1930 and 1931 was not related to the rate at which older workers had been leaving those industries in the 1920s. Taken as a whole, therefore, we find that measurable demand-side factors provide only a limited explanation of the withdrawal of older workers from the labor force.

SUPPLY-SIDE FACTORS

We now turn our attention to supply-side factors that may have influenced the economic activity of older men in interwar London. We focus on the issues of health, income, assets, and social-security entitlements. The health of older persons was likely to be an important determinant of their propensity to work, but we have very little information on this. The *NSLLL* did not ask about general health status, and there are no representative survey data concerning morbidity for this period. There are, however, some data available on mortality. As James Riley has noted, the links between mortality and morbidity are far from straightforward; but in the absence of better alternatives, we shall inspect occupation-specific mortality data to see whether they are related to measures of older workers' activity.²⁶ We would expect higher retirement rates in those occupational sectors which experienced above-average mortality.²⁷ We find a positive association between the occupation-specific standardized mortality rate for males aged 21 to 64 in 1931 and the pseudocohort withdrawal rate ($r = 0.16$), but this relationship is weak and

²⁵ Llewellyn-Smith, *New Survey*, vol. 5, pp. 150–51, 213, 245, 287, 322, and 415.

²⁶ Riley, *Sickness*.

²⁷ United Kingdom, *Registrar General's Decennial Supplement*, table 1.

not statistically significant. More important, there is no association at all between the standardized mortality rate and the unemployment rate of males aged 55 to 64.²⁸

A more promising explanation for the pattern of economic activity among older workers is that participation was influenced by the need to earn a living. We can investigate this by examining the financial information contained in the *NSLLL*. The average earnings of men in the *NSLLL* sample declined with age. Table 3 shows that average male earnings peaked at 722d per week at age 37, and fell to just 34d per week above age 75. The primary reason for this decline is, of course, the falling proportion of men who were in receipt of earnings. If we exclude from the sample all men who had received no earnings and reported no hours of work in the previous week, then peak earnings of 788d were achieved at age 41, and although earnings still declined with age, earners aged 75 and above received 536d, which is almost 70 percent of the peak age-specific average male weekly wage.

In addition to data on earnings, the *NSLLL* collected information on the hours worked by each person. This allows us to determine whether the age-related decline in average earnings per worker was a consequence of changes in the length of the average working week, or in the average hourly rate of pay, or both. The third and fourth columns in Table 3 demonstrate that for London men over age 65 who continued to be active in the labor force, there was a strong negative relationship between hours worked and age ($r = -0.69$) but a weak relationship between wage rates and age ($r = 0.08$). This indicates that there was very little occupational downgrading among older workers in the metropolitan labor market in 1930. Of men aged 65 and above still active in the labor market, only 7.7 percent worked for less than half the average number of hours each week, and only 12.8 percent received earnings below half the age-specific average (compared with 1.6 and 3.7 percent respectively for employed men aged 40 to 59). This is a surprising result. The great majority of older men who were working were not clinging on to jobs at ever-diminishing wage rates. It appears that few such jobs were available (or were taken up) at significantly inferior wage rates, or on a genuinely part-time basis.

A further indication of the employment opportunities available to older men is revealed in the final two columns of Table 3. The sharp decline with age in the proportion of earners in the male population was matched by an increase in the proportion of earners in self-employment. There is no significant difference within each age group between employees and the self-employed in earnings or hours worked, but the self-employed are, for age groups both above and below 65, heavily concentrated in a narrow range of occupations, with 60 percent of them in sectors 13 (clothing), 15 (furniture),

²⁸ Weighted correlations were estimated over the 13 major occupational sectors, as defined in note 20, but excluding sector 31 ("Other and undefined workers").

TABLE 3
EARNINGS OF NSLLL MALES, BY AGE

Age	Average Earnings of All Males (pence per week)	Average Earnings of All Earners (pence per week)	Average Hours Worked per Week (3)	Average Wage Rate (pence per hour) (4)	Earners (%) (5)	Self- Employed (%) (6)
	(1)	(2)				
Peak age	722 [37]	788 [41]	47.6 [35]	17.0 [45]	92.1 [38]	6.6 [38]
60-64	511	735	46.7	15.7	67.1	11.8
65-69	284	657	44.5	14.8	42.6	16.2
70-74	117	573	41.9	13.7	21.6	22.4
75 and up	34	536	36.0	14.9	8.1	35.3

Notes: Peak ages, in years, are given in brackets. Earnings are given in old pence (240d. = £1).

and 23 (commercial, including retailing). We suspect that this pattern is a result of self-employed tailors, carpenters, and shopkeepers remaining economically active in old age rather than former employees switching into self-employment as they became older.

Of course, earnings represent just one of a number of potential sources of total household income. The *NSLLL* data allow us to examine the relative importance of own earnings, other household earnings, and nonlabor income for all households headed by older men. The head of household was not always directly identified on the original survey cards, and we have adopted a conservative approach by attributing headship only to persons identified as "head" or "husband." This gives us 23,706 heads out of a total of 26,915 households. Missing data on age of head (some were recorded simply as "A" or "Adult" or "Full"), and exclusion of households without a male head reduces the useable number of male-headed households to 18,176.²⁹ Figure 1 shows, for all households headed by males in a given age group, the relative contributions of household-head earnings, other earnings, and nonlabor income to total household income.

Figure 1 shows that the earnings of the head peaked at age 35, but total household income peaked for heads aged 55, primarily because of the additional earnings of other household members. From age 55, household income declined continuously to age 85. The rapid fall in head's earnings, and slightly less rapid fall in other household earnings, was only partially offset by an increase in other sources of household income.³⁰ From the discussion of earnings reported in Table 3 it is clear that the fall in head's earnings at

²⁹ The *NSLLL* appears to have adopted the following procedure for attributing headship: where one adult male was present in a household, and not identified as a lodger, that person was designated household head; where more than one adult male was present, the eldest was designated head; where no adult male was present, the eldest adult female was usually designated head.

³⁰ We have assumed, in effect, that older men living in multigenerational households received a proportionate share of the income. It seems unlikely that they would have received a disproportionately large share.

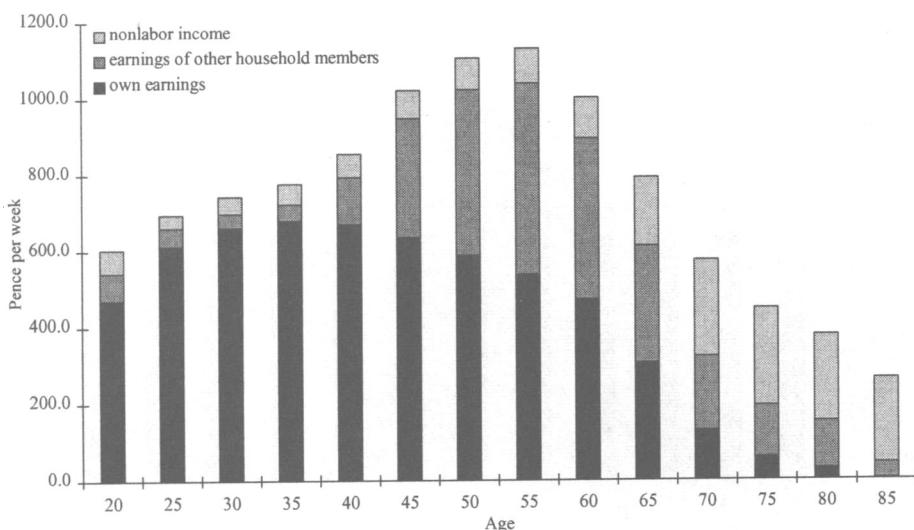


FIGURE 1
HOUSEHOLD INCOME BY SOURCE: ALL MALE HOUSEHOLD HEADS

Source: See the text.

older ages was driven mainly by a decline in the participation rate. If we examine only those households in which the head remained in receipt of earnings (Figure 2), we find a much more modest decline in total household income from age 55.³¹ A comparison of Figures 1 and 2 indicates that, for heads aged 65 and above, the earnings of other household members were a complement to, rather than a substitute for, head's earnings, although non-labor income was clearly a partial substitute for head's earnings.³²

The hump-shaped household income profiles shown in Figures 1 and 2 take no account of household size and are driven in part by differences in household size, and therefore are probably not a reliable metric of living standards, for the simple reason that elderly-headed households tended to have fewer mouths to feed, backs to clothe, and so on. To adjust for this, we apply the OECD Needs Index, which gives a weight of 1.0 to the first adult,

³¹ This role of participation in determining the household income of the elderly has been overlooked in analyses that rely on labor-force survey data. For the United States, Gratto and Rotondo ("Industrialization," pp. 343–48) argue that old age was a period of high living standards, on the basis of labor-force survey data from 1917 through 1919 which included only elderly-headed households where the head was still economically active (the equivalent of our Figure 2 data). But the proportion of elderly male heads with earnings declines with age. Hence reliance on labor-force survey data will give an over-optimistic view of the economic resources and living standards of elderly-headed households as a whole.

³² It is possible that the limited extent of contributions by other family members may be related to the fact that the majority of older men lived in independent households. Of the 1,813 households containing men aged over 65, 63 percent were composed of only one or two persons.

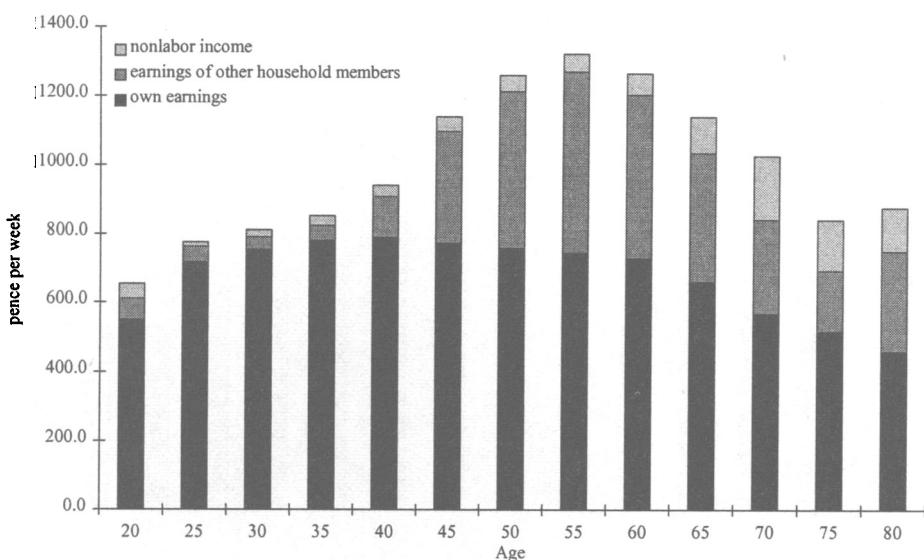


FIGURE 2
HOUSEHOLD INCOME BY SOURCE: EMPLOYED MALE HOUSEHOLD HEADS

Source: See the text.

0.7 to other adults, and 0.5 to children under 18.³³ Figure 3 shows standardized household income by age of head as a proportion of mean standardized household income of all 18,176 male-headed households (with or without earnings). This shows that heads aged between 20 and 40 lived, on average, in households with a standardized income marginally below the average. From age 45, standardized income rose above the average to reach a peak in the late 50s, when it was 15 percent above the average. From this point, however, standardized income fell steadily with age, so that older household heads could expect standardized income to fall to the working-class average in their late 60s, and to be substantially below average thereafter. It is clear from a comparison of Figures 1 and 3 that the decline in standardized income from age 60 is driven by the steady fall in average earnings of the head of household, which as we know was driven by falling participation.

Income from nonlabor sources provided only limited replacement of earned income for these older households. The NSLL recorded 19 separate sources of nonlabor income, but few of these sources provided substantial support to many elderly-headed households. Table 4 reports the number of households headed by elderly men in receipt of other income from the six most common sources of nonlabor income, together with the average weekly sum received by all elderly households, and by those receiving income in

³³ Falkingham and Hills, *Dynamics*, p. 101.

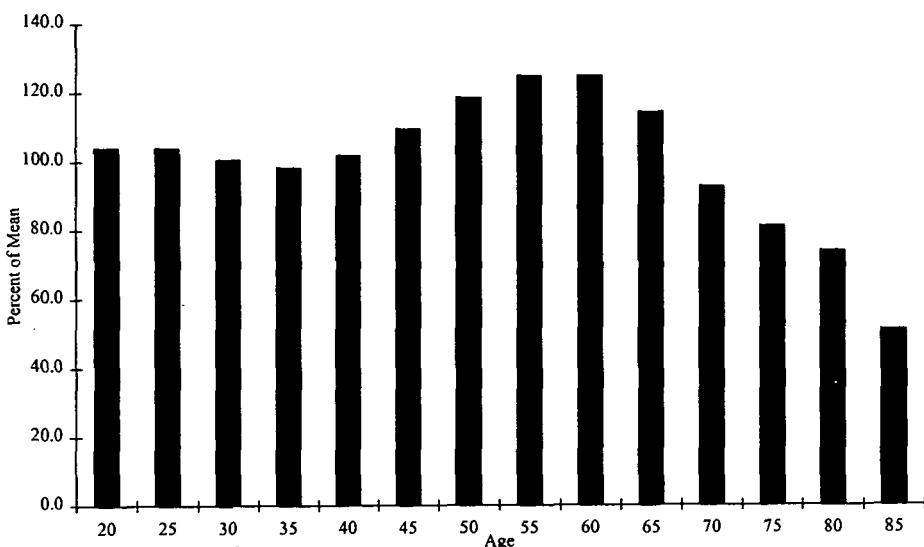


FIGURE 3
STANDARDIZED HOUSEHOLD INCOME AS PROPORTION OF MEAN

Source: See the text.

each category. It is clear that only pensions and rental income made a significant contribution to the average income of the 1,528 elderly-headed households in the sample. The four other sources also provided significant sums, but only for the small number of households that received this type of income.

The number of elderly-headed households in receipt of income from assets was very small: out of 1,528 households, only ten reported income from savings, five reported income from property, four from private means, and two from trading profits. The low level of asset ownership recorded by the *NSLLL* is consistent with aggregate data. The mean value of aggregate household savings rates was only 4.4 percent in the period 1880 to 1914, and 5.1 percent between 1920 and 1939, most of which was attributable to middle-class households.³⁴ Paul Johnson has estimated the average value of working-class assets in 1931 to be £32.8 per adult, half of which was held in the form of long-term insurance contracts with friendly societies and industrial assurance companies.³⁵ It appears that even the most diligent of working-class savers would have found it difficult to provide for an adequate old age; for example, the purchase price at age 65 of an annuity paying 10s.

³⁴ The household saving rate is estimated as the annual change in the stock of encashable household assets as a proportion of income from employment. Data are taken from Sheppard, *Growth*, pp. 18–19; and Feinstein, *Statistical Tables*, table 1.

³⁵ Johnson, *Saving*, p. 205. See also Political and Economic Planning, *Exit*, p. 13.

TABLE 4
SOURCES OF UNEARNED INCOME FOR HOUSEHOLDS
WITH MALE HEADS AGED 65 AND OVER

Source	Number of Recipient Elderly Households (n = 1528)	Average Receipts (pence per week)	
		All Elderly Households	Recipient Elderly Households
Pensions	1151	172	228
Rent	444	60	207
Poor relief	124	13	101
Allowances from relatives	50	5	166
Unemployment insurance benefits	32	6	280
Health insurance benefits	23	2	145

Source: NSLL files.

per week (the same amount as the public pension) was £243 for men and £280 for women.³⁶

Although few financial assets were held by older NSLL men, there is some evidence that savings were used to purchase property. The NSLL contains information on tenure, distinguishing (among other things) rented accommodation from owner occupation.³⁷ Only 4.3 percent of the 18,176 males who headed households in the NSLL were owner-occupiers. Not surprisingly, ownership rates rose with age, from 2 percent at age 30 to 5.7 percent at 50, reaching a maximum of 7.9 percent at age 75. These rates seem plausible for a working-class metropolitan population; it has been estimated that about 10 percent of all homes in Britain were owner-occupied before the First World War,³⁸ and there was little change in these ownership rates until the introduction of cheaper and more flexible mortgages in the mid-1930s.³⁹

Table 4 shows that the most important source of nonlabor income received by elderly-headed households was the state pension. The entitlement

³⁶ Stone and Cox *Insurance Tables*, pp. 232–34.

³⁷ The NSLL did not identify ownership explicitly. If the tenure status of the property was returned as owner-occupied, we have assumed that it was owned by the head of the household.

³⁸ Before the 1930s it was difficult to finance more than half the purchase price of property. Following the fall of interest rates in 1932, 90-percent mortgages became available, leading to an increase in working-class purchases. See the discussion in Richardson and Aldcroft, *Building*, pp. 209–11.

³⁹ The low ownership rates in the NSLL can be contrasted with high rates in the United States. Haines and Goodman ("Home") report urban ownership rates of more than 20 percent for 30-year-olds in the 1930 U.S. census, rising to over 60 percent for 70-year-olds. These U.S. data are consistent with high levels of deliberate asset accumulation over the life cycle, whereas the NSLL data demonstrate that the accumulation of real estate was a strategy adopted by a very small minority of adult males in interwar London.

to a state pension at some age is likely to have reduced the individual's propensity to offer his labor in the market, because it lowered the opportunity cost of nonemployment by 120d per week. There were two state pension schemes in operation during the survey period. Under the 1908 scheme, which was last amended in 1924, a person was entitled to a noncontributory pension of 10s per week at age 70, subject to a means test. A full pension was paid if total annual income did not exceed £65.25, of which only £26.25 could be earned income. The pension was reduced *parri passu* above that point. This meant, in effect, that there was no point in pensioners earning between 10s and £1 per week. In fact, about 97 percent of those who drew this noncontributory pension received the full amount. In addition, some people aged 65 to 69 were drawing contributory pensions. This pension, which came into force in 1928, paid 10s per week to men aged 65 to 69, with an additional 10s per week for their wives if aged 65 or above, subject only to a qualifying contributions record; there was no means test. At age 70, these pensioners were transferred to the noncontributory scheme, but in this case there was no means test. Hence, the pension threshold was either age 65 or age 70, with a means test in the latter case.⁴⁰

Inspection of aggregated data suggests that the impact of these pensions on the behavior of older men in the *NSLLL* sample was not large. As Table 3 shows, there is no evidence that hourly wage rates or hours worked by men over age 70 were reduced to avoid the income threshold of the means-tested pension. To test for a participation effect we fitted a cubic of age to the age-specific participation rate for men aged 60 to 75. The fit is good (with an R^2 of 0.97) and there is no significant impact on participation at either age 65 or age 70; the residuals lie within the standard error bands for all ages except 74. However, since all pensions payable to people aged 65 to 69, and half of all pensions paid to people over age 70, were subject to neither an income nor a work test, it would be surprising to find evidence of strong age-threshold effects on employment. In fact employment rates among pensioners were quite high. In households receiving a pension income, just over half of all heads aged 65 were active in the labor force, and at age 75 the figure was 13.8 percent. These are similar to the rates found by William Beveridge in the early 1940s, when 55 percent of 65-year-old pensioners, and 12.5 percent of 75-year-old pensioners, were still economically active.⁴¹

However, the *NSLLL* information on sources of income allows us to determine, for all male household heads, the association between the probability

⁴⁰ There were 2,069,080 persons holding basic pensions in the United Kingdom in 1930. Of this number, 967,991 held noncontributory pensions which were means-tested, of which 26,697 (2.6 percent) were not paid at the full rate. In 1930 644,080 persons aged 65 to 69, and a further 457,909 aged 70 and over, held contributory pensions under the scheme introduced in 1928. U.K., *Statistical Abstract*, pp. 86-89; and Cohen, *British System*, pp. 52-53, 71, 73.

⁴¹ Beveridge Report, p. 197.

TABLE 5
LOGISTIC REGRESSIONS OF EARNINGS PROBABILITIES

	Age 60 and up	Ages 60-64	Ages 65-69	Ages 70-74	Age 75 and up
<i>HHY</i>	1.0000	1.000	1.000	1.000	1.000
<i>ADLT</i>	1.1219*	0.9181	1.126	0.8310	1.059
<i>KIDS</i>	1.1506*	1.1317	0.8852	0.9324	1.445
<i>OWN</i>	0.5178**	0.4627**	0.3585**	1.21	1.354
<i>RELS</i>	0.9896**	0.9938*	0.9905**	—	—
<i>POOR</i>	0.9784**	0.9722**	0.9866**	—	—
<i>HLTH</i>	0.9777**	0.9754**	0.9788**	—	—
<i>PENS</i>	0.9905**	0.9934**	0.9941**	0.9945**	0.9893**
<i>RENT</i>	1.000	1.000	1.000	0.9998	0.9981
<i>UNEM</i>	0.9910**	0.9893**	0.9942**	—	—
<i>OTHR</i>	0.9940**	0.9978*	0.9958**	—	—
<i>N</i>	2,626	1,098	721	434	258
Log Likelihood	-1,326	-508	-413	-229	-75
χ^2	967	362	159	38	35
Pseudo- <i>R</i> ²	0.267	0.263	0.162	0.078	0.190

* = Significant at the 10 percent level.

** = Significant at the 5 percent level.

Note: Reported coefficients are odds ratios.

Source: See the text.

of being in receipt of earnings and various other household characteristics, including other sources of household income. We have estimated logistic regressions in which the dependent variable, *EARN*, takes the value of one when the head is in receipt of earnings (this being the strict definition of labor-force activity used above), and zero when he is not. The independent variables are *HHY*, the earned income of all other household members; *ADLT*, the number of adults in the household, excluding the head; *KIDS*, the number of children (aged 0 to 17) in the household; *OWN*, a tenure variable taking the value of one for owner-occupiers and zero for renters; *RELS*, financial assistance from relatives, in pence per week; *POOR*, poor relief, in pence per week; *HLTH*, health insurance benefits, in pence per week; *PENS*, pension payments, in pence per week; *RENT*, income from subletting, in pence per week; *UNEM*, unemployment benefits, in pence per week; and *OTHR*, other (nonspecific) income, in pence per week.⁴²

Table 5 presents the results, in terms of odds ratios, of the logistic regressions for all heads aged 60 and over and for four subgroups for ages 60 to 64, 65 to 69, 70 to 74, and 75 and over. Earnings of other household members (*HHY*) did not have a significant impact on the employment propensity

⁴² All additional forms of unearned income, relating to trade-union benefits, income from charity, friendly-society benefits, perquisites, lodgers, rent, income from savings, trading profits, property income, workmen's compensation, private means, military reserve pay, odd jobs, and scholarships were excluded from the logistic regression because they were insignificant across all age ranges.

ties of older men, and the impact of household size (*ADLT* and *KIDS*) was marginally positive for all men aged 60 and above, but this relationship was not sustained across the age subgroups. Owner-occupancy had a significant negative impact on employment probabilities up to age 70, as did all other itemized sources of nonlabor income except income from subletting. From age 70, however, only pension income had any significant effect. The leverage is quite large; for instance for men aged 65 to 69, owner-occupancy reduced the odds of employment by 64 percent, while receipt of a pension of 120d reduced the odds by 71 percent. However, the explanatory power of these regressions is low, which suggests that many of the factors influencing employment at older ages were unrelated to household structure or financial circumstance.

CONCLUSIONS

Our analysis of the *NSLL* sample shows that income peaked at 115 percent of the mean for households headed by men in their late 50s, and then declined continuously with age to reach only 69 percent of the mean for men aged 80. This age-related decline in household income was driven by the declining employment propensities of older men. Data on wage rates and hours worked indicate that the metropolitan labor market was not flexible enough to accommodate older workers with lower-paid jobs, or a significantly shorter working week.

Elderly-headed households had very few savings or tangible assets. Public pensions were the single most important source of income for nonemployed elderly households, and receipt of pension income was associated with reduced employment propensities; but nonlabor income, household structure and property ownership together account for less than a fifth of the observed pattern of employment beyond age 65. Some demand side-factors—for instance the compulsory retirement rules of some superannuation schemes—appear to be associated with high rates of withdrawal from the labor force. So some pensioners do seem to have been pushed out of the labor market by a lack of appropriate jobs, whereas others chose to jump into retirement, attracted by the prospect of a pension income. We should note, however, that these pensions were inadequate, on their own, to maintain income close to or above contemporary estimates of the poverty line. The maximum public pension income for single and two-person households was only 49 percent and 75 percent, respectively, of a recent estimate of poverty-line income.⁴³

⁴³ Despite its stated intention to estimate the extent of poverty, the *NSLL* did not, in fact, calculate a poverty line. Linsley and Linsley have adjusted the poverty line estimated by Rowntree for the Second York Survey so that the poverty line in London between 1928 and 1930 and York in 1936 would be comparable. The budgets were not generous, covering little more than basic needs, as appears to have been Rowntree's original intention. The food component was what at the time was considered the

On the demand side, employers paid wages that were largely invariant by age. On the supply side, the effort expended by older workers declined with age.⁴⁴ The gradual age-related falloff in effort was primarily an aggregate effect of the exercise of binary choices—to work, or not to work—by each older man. There was only limited scope for older employees to negotiate a phased abatement of work effort by gradually reducing the length of the working week, and virtually no scope for negotiating a reduction in the intensity of work effort in exchange for reduced wage rates. We infer from the relative increase in self-employment among older cohorts that when workers could directly control the amount of effort supplied, they were able and willing to continue working into old age.

This raises the question of why metropolitan employers did not place wage bids to match the effort offered by older men. This cannot have been due to a social-security reservation-wage effect, because all pensions commencing at age 65, and most at age 70, were paid as insurance entitlements and without regard to the level of labor (or other) income. Little is known about the relationship between age and wage for manual workers in this period, but we note that in the interwar labor market the great majority of manual workers were paid at time rates (usually weekly) rather than piece rates. Although the metropolitan labor market from 1929 to 1931 was buoyant relative to the rest of the country, there was no evidence of excess demand for manual workers in London. Overall, therefore, there was no incentive for employers to sustain the organizational costs of offering more flexible terms of employment to older workers.

Some older men were pushed into retirement by retirement rules and other demand-side pressures. Others, facing a binary choice, jumped when the effort required to sustain full-time, full-speed employment could no longer be sustained, or was not worth sustaining at the going wage. What almost no older employees could do was choose a transition from work to retirement through a gradual reduction in effort and earnings.

minimum needed to maintain health and physical capacity. It was similar to the Ministry of Health's minimum food standard of 1931. The clothing allowance was only sufficient for a "moderate respectability." There was an allowance for a newspaper but not a wireless. The allowance for all tobacco, beer, presents, holidays, books, and travel was 22d. per week for a family of 5, or 4 percent of all expenditure. There was no allowance for furniture or decorating. The Linsley/Rowntree standard yields a poverty line of 546d. for a family of two adults and three children, 321d. for a couple, and 246d. for a single man. See Linsley and Linsley, "Booth, Rowntree," pp. 91, 93–94, 97–98; and Rowntree, *Poverty and Progress*, p. 502.

⁴⁴ A general explanation for this decline in effort with age, one common to all populations, is the impact of morbidity; but we have no way of directly identifying its effect in the NSLLL data.

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