

**HUMAN RESOURCES  
& THE LABOUR FORCE:  
ISSUES FOR CONTEMPORARY  
& COMPARATIVE RESEARCH**

**John Ermisch and Heather Joshi**

Discussion Paper No. 1



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John Ermisch

and

Heather Joshi

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Centre for Economic Policy Research  
6 Duke of York Street  
London SW1Y 6LA  
England

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Human Resources and the Labour Force:  
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ABSTRACT AND SUMMARY

This paper emphasises some of the outstanding issues on the agenda for research on the labour force in Britain. It surveys topics but not results and does not attempt to review the literature or current research. Human resources are defined as the potential for creating economic welfare through the use of people's time. The paper takes a broad view of labour supply questions as involving the lifetime allocation of everybody's time over a range of "non-market" activities like education, caring for oneself and others as well as paid work. It recognises quality as well as quantity dimensions to these activities and views the stock of resources as an asset, the outcome of investment.

Possible topics for research are listed under three broad headings: a) factors affecting the creation of human resources and their supply to the economy; b) factors affecting the quantity and quality of employment on the demand side of the economy; and c) factors affecting processes of adjustment to change. The very wide field thus encompassed ranges from questions of family formation and dissolution, the 'unemployment' and 'poverty' traps, geographical mobility of residence and employment pay discrimination, the 'discouraged worker' hypothesis and the flexibility of working hours. The authors suggest combining the insights of human capital models with those of labour market segmentation and advocate further exploitation of longitudinal data for a number of purposes. The ultimate purpose of research on human resources and their deployment is seen as an attempt to document the complementary growth of human and non-human resources in the process of economic development.

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John Ermisch  
Policy Studies Institute  
1/2 Castle Lane  
London SW1E 6DR  
01 828 7055

Heather Joshi  
Centre for Population Studies  
(London School of Hygiene)  
31 Bedford Square  
London WC1B 3EL  
01 636 5281

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John Ermisch  
Policy Studies Institute  
and Centre for Economic  
Policy Research

Heather Joshi  
Centre for Population  
Studies (London School of  
Hygiene) and Centre for  
Economic Policy Research

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## HUMAN RESOURCES AND THE LABOUR FORCE: ISSUES FOR CONTEMPORARY AND COMPARATIVE RESEARCH

The conventional approach to the history of the labour force has been mainly to ask how many people are in it and what do they do. This is the appropriate question if there is complete specialisation between people into long-term full-time members of the labour force and their dependents. This means that people can be labelled by the category of their primary activity. Since the division of labour may evolve to take on different forms, we believe that it is better to examine the general question about how much of their time people are spending in paid work and other activities. Virtually everyone spends some time in education, unpaid work, leisure and paid work, and it is quite possible for all of these activities to take place in the same period. The crude classification of persons into those currently with and without paid work ignores the variety of lifetime patterns of participation in paid employment that does exist and might develop in the future. The flexibility of working life is a practical issue, and the tools which measure economic activity should allow for the potential variations. Another reason for adopting a more general approach is that the proportion of total wealth created by activities within the sphere of the market changes over time.

This paper is not a survey of the literature. It is an examination of research issues. No attempt has been made to relate these issues to previous or present work since we felt that we could not do justice to the vast literature in the areas covered, nor treat fairly all of the authors who have contributed to our view on these issues.

### I LIFETIME ALLOCATION OF TIME

In general, resources are means of supplying wants, or, put differently, means of creating economic welfare. Human resources are the potential for creating welfare through the use of people's time. They have a quantity and quality dimension: the amount of human time available and the productiveness of that time in creating welfare. Both of these dimensions depend upon how people allocate their time over their lives. For instance, a person's participation in education or other training may (depending upon the welfare directly created by education) reduce welfare in the current period, but in the future his time in certain activities is likely to be more productive as a result of the education or training. The allocation of time to such investment activities produces, therefore, inter-temporal links between the amount of human resources in two periods of time.

Thus the 'stock' of human resources at a point in time represents a history of time allocation. This behaviour may have been the product of conscious choices, or may have been 'forced' by the lack of perceived alternatives or severe constraints.

One aspect of this behaviour is reproduction. The bearing and rearing of children requires parental time, and the quantity and quality of parental time in child rearing affects the future productivity of their offspring in creating economic welfare. While human resources are potentially renewable through reproduction and the rearing of children there is no assurance of renewal. Human resources could grow or decline across generations depending upon the time allocation decisions of the preceding generation.

In a similar vein, allocation of time and other resources to health care affects the quality and quantity of human resources in the present and the future. In addition, other time allocation and consumption decisions can affect health (for example, the time devoted to exercise, a persons' diet and cigarette consumption).

From this perspective it is clear that the analysis of the development of human resources over time is intimately related to the analysis of the way people are spending their time. This perspective also indicates that the traditional identification of human resources with the quantity (persons and hours) and quality (productivity) of the labour force only captures part of people's welfare-creating activities. It ignores their productive activities in the home and the voluntary sector, including leisure, and their investments in future welfare-creating capacity. This is easily seen in a simple static (or one period) model of time allocation between three main activities: paid employment, leisure and 'home production', which combines time and purchased goods and services to create welfare. In the simplest case, where a person spends some time in each of these activities (and there is no 'joint production'), the value of an hour is the same in each activity and equal to the wage rate. Clearly, the person's time is creating welfare in all of the activities, not just in paid employment. In this simple case, the person's human resources would be the product of his wage rate and his total available time. We are, of course, not only interested in stocks of human resources, but also how they are allocated to different uses and what influences that allocation.

The more traditional view of human resources has only been concerned with the quantity, quality and activity distribution of those human resources which have been allocated to the market economy. Even the study of this subset of human resources requires analysis of people's time allocation between paid employment



and other uses, but to ignore how this other time is allocated and what affects its allocation is to ignore important uses of human resources which also create welfare and which may affect the quantity (e.g. reproduction) or the productivity (e.g. health, education) of human resources in the future.

In this section of the paper we discuss research issues concerning the use and development of human resources in this broad sense, which are intimately related to the lifetime allocation of people's time. The second section discusses research issues related to human resources employed in the market economy. A third section examines issues related to the responses of labour market participants to change.

### **Education**

An important aspect of time use early on in a person's life concerns the extent and type of educational activity before and beyond the minimum school leaving age. In particular, to what extent do parental education achievements, parental income, prospective returns from additional education, and the state of the current labour market (in terms of employment opportunities and earnings) influence the choice to stay on at school? There are similar questions concerning the pursuit of higher education and other advanced training, after school or in mid-career. While there has recently been some aggregate time series analyses of these questions it would be worthwhile addressing some of these questions with micro-data. Of particular interest is the impact of stronger lifetime labour force attachment by women on their educational and training choices. Will stronger prospective attachment by recent generations of women encourage women to receive more education and training and to take courses similar to those of men (e.g. move away from concentration in the teaching and nursing professions), or does the prospective early career break for childbearing remain a large disincentive? What is the demand for mid-life training, and what factors affect it? In particular, is the short prospective period for reaping its benefits a major inhibiting factor, or are there strong institutional constraints?

On a more fundamental level, to what extent do higher educational attainments really enhance a person's productivity, or are they mainly a screening or signalling device for employers? Screening or signalling devices may have their own function in aiding the process of matching workers to jobs, especially if they identify unmeasured characteristics such as ability or motivation, which have produced the educational attainment rather than having been produced by it. For the person, the acquisition of educational qualifications would have a return even if the qualifi-

cation were only a signalling device. But the private and social returns diverge as they enhance his ability to appropriate rather than raise output. Similar considerations may apply to other elements of 'human capital', like work experience (discussed below).

Answers to the screening versus productivity question should also consider productivity in the different uses of time. For example, even if higher education did not increase productivity in the market economy, it may enhance productivity in child rearing, consumption activities, including leisure and voluntary work; thus it could increase a person's potential for producing economic welfare, and it would also affect the person's time allocation. Thus, in addition to the fundamental question being asked, there is a considerable research agenda concerning the effect of education on productivity in various non-market activities; for instance, its effect on the production of 'good health' of oneself and other family members and on the quality of time spent in child rearing. While there has been research on such issues in America there is a dearth of similar analyses of British experience.

A related issue concerns the effect of the increase in the supply of persons with particular qualifications (for example, graduates) relative to other workers on the relative earnings of these qualified persons (thus also on the prospective returns from receiving those qualifications). In other words, is there a sufficiently large upward trend in demand for such qualified persons to maintain any productivity-increasing effect in the market economy roughly constant, or does it fluctuate with changes in relative supply?

#### **Lifetime allocation of working hours**

Changes in educational attainments clearly affect the age at which a person enters the labour market. Aside from that, the extent and timing of participation in paid employment over one's life is a matter of choice, although it may be a severely constrained choice in many aspects. For example, there may be severe limits to the ranges in which a person can vary their weekly working hours, and the ages at which persons can enter retirement are strongly affected by institutions which pay pensions.

The most interesting issues here relate to the extent and timing of women's participation in paid employment. In particular, what are the impacts of women's earning opportunities, childbearing, husband's earnings, borrowing constraints and inter-generational influences (such as aspirations, mother's employment) on a woman's participation in paid employment over her lifetime, including the degree

of participation - part-time or full-time? Are these impacts changing over time? How homogeneous are these lifetime employment patterns among women? For example, is the average pattern made up of mainly two contrasting groups of women: those who participate in paid employment very little after the birth of their first child and those who are employed for most of their lives? Do transitory period influences like fluctuations in real wages and unemployment strongly effect women's labour force participation, or do permanent, person-specific factors like educational background and life cycle factors like childbearing dominate? What is the effect of the risk of divorce on women's lifetime employment patterns?

A number of issues arise in connection with the effects of transfer payments on the supply of working hours by men and women. These include the effect of pensions (and other non-employment income) on retirement and the so called 'unemployment trap' and 'poverty trap'. For instance, how strong are the effects of state pensions and occupational pensions on retirement or on a switch from full-time to part-time employment? How will the gradual maturing of the state earnings related pension scheme affect older men's and women's participation in paid employment? Similarly, what effect has the wider coverage of occupational pensions had on participation? Related to these issues is the effect of lifetime employment patterns on state and occupational pension entitlements. This is again a particularly important matter for women. How do different lifetime employment patterns affect the size of their pension entitlements? Given these patterns, what effects would various alternative pension arrangements have on their entitlements? What inhibits men from taking mid-life breaks from full-time employment? Is it the institutions which promote continuity, or is it always a rational strategy for the individual?

The 'poverty trap' arises when income tax, national insurance contributions and withdrawal of means-tested benefits fully, or in large part, offset an increase in income. To what extent do such high marginal tax rates reduce the time allocated to paid employment by family members, particularly by women? If there is a significant effect, to what activities is the time allocated? For instance, is childbearing encouraged?

The 'unemployment trap' can arise when income while unemployed is high relative to income if employed. Do such high 'replacement ratios' significantly affect the likelihood of taking a job? How do such effects vary among demographic groups? A related issue is whether the presence of a second earner in the family, particularly the spouse, affects the duration of unemployment. The rise of the two

earner family makes the latter an important issue. The size of the effect has implications for the optimal design of an unemployment benefit system. In general, dis-incentive effects should not be viewed in isolation. There is a trade-off in any such system between welfare losses from income uncertainty and welfare losses from lower output. Research which aided the measurement of this trade-off would be particularly useful in the context of present debates. Another related question concerns how regulations of the unemployment benefit system affect unemployment (for example, comparisons with the system operating during the inter-war period). While recent research using cohort data has certainly shed considerable light on some of these questions, additional research, particularly on the trade-off question, would be helpful.

### **Accumulation of human capital**

Skill acquisition is an important element in the accumulation of 'human capital' - the productivity of a person's time in creating welfare. We have discussed one aspect of skill acquisition - education, but an equally important way of acquiring skills is through 'on-the-job training', 'learning by doing' or from mistakes. We shall focus on the acquisition of marketable skills, but much of the discussion would also apply to skills that are generally not marketed (for example, child-rearing skills).

The effects of employment experience on skill acquisition are generally investigated by estimating 'earnings functions', which relate earnings to educational attainments and some function of work experience. Most of previous analyses, particularly in Britain, use cross-section data for men, since men's working careers are generally continuous from the time they leave full-time education, and there is a paucity of longitudinal data. Little is known, however, about the effects of discontinuity in employment and of the extent of employment (for example, part-time in contrast to full-time) on skill acquisition and earnings. This is clearly a very important issue for women's earnings, and the recent availability of the DE/OPCS Women in Employment Survey, which contains retrospective information on working patterns, provides an unprecedented opportunity to examine this issue in Britain. Investigation of this general issue is related to a number of particular issues. For instance, how do changes in women's prospective lifetime labour force attachment affect their career choices? In other words, does the expectation of fewer and shorter interruptions from paid employment cause women to enter careers with more skill acquisition in the early phase, making for steeper earnings-experience profiles? In particular, how does childbearing affect women's earnings? Does part-time employment affect women's subsequent earnings in a manner similar to full-time employment? Does the pattern of experience and interruptions

matter, or only the totals? Answers to all of these questions are important for measuring the degree of sex discrimination in the labour market and for computing women's prospective pension entitlements. In light of its growing importance, it is also important to know how divorce and the perceived risk of divorce alter women's career choices and earnings.

A person's human capital and market earning power is also affected by the inputs of parental time and other resources to his childhood development. In addition to the direct inputs, the way in which parents manage the child's time may also be important. In Britain, there has been little analysis of how the quantity and quality of parental inputs to child development affect the child's subsequent earning power and productivity in creating welfare. Clearly longitudinal data is most appropriate for the analysis of this issue, and analysis of the MRC National Survey of the 1946 birth cohort and/or the National Child Development Study may, for instance, shed some light on it. Because of their relation to economic inequality, the relationship between these parental 'investments in children' and government transfer programmes is also important. For instance, parents may respond to longer publicly provided schooling by reducing their investments in children, thus partly offsetting the effect of more education on human capital. Or parents may respond to taxes on bequests of material wealth by investing more in the human capital of their children; the inter-generational transfer of wealth inequality may be affected very little by the tax. More generally, the analysis of inter-generational transfers and their effect on the distribution of wealth and social mobility should not ignore the role of parental investments in children, but they often do so. Research on the impact of parental investments in children on subsequent earnings and their determinants could enlighten a number of these issues.

While it may seem unrelated, the concern over the effect of state retirement pensions on personal saving is also connected to parental investments in children. Parents may well respond to the larger state transfer from the younger to older generation by increasing their intrafamily transfers to their children, partly through higher parental investments in children, and partly through higher bequests. Aggregate savings may be unaffected. Furthermore, empirical tests of the effects of state retirement pensions may be biased if they omit the effects of other government programmes making inter-generational transfers (e.g. education, child benefits, government debt). These hypotheses have emerged from development of the 'overlapping generations model' and they suggest that fruitful insights can be obtained from further development of this model. For instance, the model suggests that the size of parental investments in children may affect interest rates in financial markets.

A person's human capital is also a function of his health. Good health is 'produced' (clearly with uncertainty) by combining inputs of one's time (e.g. in exercise) and purchased goods and services (e.g. diet, housing, medical care). As noted earlier, the efficiency in the production of 'good health' may be related to other aspects of human capital, such as educational attainments, and health eventually deteriorates with age. Medical care would be sought to maintain one's health. To our knowledge, there has not been any attempt to estimate the 'demand function for health in Britain', relating health to age, a person's cost of time, income, educational level, and, as medical care is supply-determined in the NHS, a medical care supply measure. Such analysis may be helpful to the DHSS since it would suggest determinants of pressures on NHS services and of certain disability payments, and it would of course also suggest factors influencing the productivity of the labour force. While discussed above in terms of individuals, the factors affecting the time allocation of other family members, particularly the spouse, may also significantly affect a person's health. Also, some factors, such as low income, may affect the health of some family members more than others because of family priorities in resource use.

#### **Family formation and dissolution**

The future labour force (15-20 years hence) is clearly related to reproductive decisions today, and to the extent that women continue to leave the labour force (or switch to part-time work) for at least the first few years of the child's life, today's labour force is also affected. In that child rearing involves the input of parental time and purchased goods and services, like other time allocation decisions, reproductive decisions are likely to be affected by the costs of parental time, particularly the mother's, real income, and other factors affecting women's lifetime labour force attachment. Previous work has indicated that such an economic model of reproductive behaviour can be helpful in interpreting past changes in the birth rate, and it also has done well in forecasting short-term movements in birth rates. It therefore appears worthwhile to extend such work using more detailed data by birth order since there are reasons to believe that responses will vary according to birth order. Models based on economic theory have not been used to attempt to account for differentials in British family formation patterns, including the timing of births. Research in this area using cross-section or longitudinal data is also likely to be fruitful, especially when its results are viewed in conjunction with the aggregate time series analysis. Because of the importance of changes in the timing of births (in contrast to changes in completed family size) in accounting for fluctuations in births, the time series analysis is probably of higher priority.

Marriage generally alters the partners' time allocations. Since changes in women's lifetime labour force attachment and earnings relative to men alter the benefits from the division of labour within marriage, they may also alter the propensity to marry, particularly to marry at young ages, and the likelihood of divorce. Previous research has suggested that this may be the case for the timing of marriage. Less is known about the relevance of this economic model for divorce in Britain. In that divorce is the main cause of the growth in one parent families, who often experience economic hardship, research on the systematic factors influencing divorce could be useful. Furthermore, as suggested earlier, divorce is likely to affect women's employment patterns, and the perceived risk of divorce may affect the accumulation of human capital, the amount and timing of childbearing, and also the timing and propensity to marry. Marriage patterns may also affect participation in paid employment by women and their accumulation of human capital. Research is needed to help sort out these interactions between marriage and divorce and the employment patterns and human capital accumulation of women.

### **Spatial dimensions**

Time allocation is also interdependent with residential location. There is interest in both the geographical location across Britain and the location in an area relative to employment centres. Of particular interest is the effect of women's employment patterns and career choices and of childbearing on residential location, although these must of course be viewed in conjunction with other influences (e.g. husband's earnings) and other choices and constraints (e.g. housing tenure) affecting residential location. Location decisions clearly interact with housing choices and housing market variables (e.g. house price 'gradients'). The spatial dimension of human resources is important in the determination of their utilisation. Issues relating to adjustments of location to earning opportunities are discussed in the third section of the paper, after examining the 'quality' of working life.

## **II THE ECONOMY AND EMPLOYMENT**

The quantity and quality of labour services being performed in the paid economy is the joint outcome of the labour supply factors discussed in the previous section and the level and structure of demand for those services by the producers of market goods and services. Many aspects of the paid work observable to the historian and the contemporary analyst of the labour force reflect the nature, technology and organisation of production, so the history of the supply of human resources to the economy cannot be isolated from that of the demand side of the labour market.

### **The Quantity of Employment**

The interaction of the aggregate quantity of labour demanded and the aggregate supply raises some well known but unresolved research issues connected with the role of wages and prices in clearing the labour market and the alleged effect of aggregate disequilibrium to induce changes in labour force participation rates. The former question occupies a vast literature of macro- and labour economics. The latter, often concerning women but sometimes also males at the extreme age ranges, is known as the 'discouraged worker hypothesis'. It remains to be determined what recent changes in activity rates have actually been and whether they can be adequately accounted for by movements in wages, non-labour income and changing family structure, or whether the fall in job opportunities has induced a direct withdrawal of personnel from the self-reporting labour force. It should also be possible to use similar methods to look for 'discouraged workers' in previous post-war recessions and the inter-war period.

International migration is a mechanism through which the quantity of the labour force had 'adjusted' in the past (and in contemporary Europe) and is also a mechanism for the international exchange of human capital. It does not appear to be a very important issue in contemporary Britain, though it might be perspicacious to enquire why the opportunities for movement within the EEC are not more exploited by the British.

### **The Quality of Employment**

The question of how the quantity of employment has been changing is of limited interest unless one also enquires about the quality of employment. The list of what it might be relevant to chronicle about paid work is probably endless, and only the first few characteristics noted below are regularly collected in national statistics, and even then the classifications tend to change to suit the times. The question of what commodity is being produced is handled by data on the industrial structure of employment, and occupational classifications purport to show what sort of skills and levels of responsibility are involved. It is sometimes assumed that occupational categories also tell us about the earnings and/or the social status of the workers, though this is arguable, particularly for women. Geographical analysis tells us where the work is being performed according to the map of regions and sub-regions prevailing at the time, and data on travel to work also tell us about its location relative to workers' homes. Censuses of Population record employment status (or mode of production) and some other sources give the sector of ownership, the size of establishment in which employees work, the number of people supervised by those who have such responsibilities, and the size of the actual work unit.



There are a whole range of questions related to pay and fringe benefits like holidays, sick-pay, employer pensions, facilities at the workplace. What is the machinery for determining pay and how many workers belong to which unions? How is work parcelled out into 'jobs' - what are the normal hours, how much is overtime? How are workers distributed over 'jobs' (double-jobbing and work-sharing)? How are hours of work spread over the hours of the clock and the days of the week and year? Then there are the 'conditions' of work in terms of the security of contracts and the sort of concerns sometimes known as the 'Quality of Working Life': the physical environment in which work is carried out, how is it managed and supervised, how much variety or monotony in the tasks one person performs, how much effort, ingenuity and initiative are displayed, what is the social ambience of the work place?

How much work is enjoyed for its own sake - its consumption benefit - is a question which deserves serious attention rather than the conventional assumption of neo-classical labour economics that work only generates disutility. It would assist economists to comprehend the disutility of unemployment and to estimate the direct gains of reducing it. Then there is the hypothesis that society may have sacrificed some potential growth in productivity in favour of improved work conditions: a compensation for the alleged 'British disease' of slow productivity growth not captured by conventional national accounting. On the other hand there may sometimes be productivity gains to improving work conditions which employers do not exploit and there is also doubt about whether such pay differentials as there are in favour of less pleasant jobs adequately reflect their relative undesirability.

While it is recognised that the psychic benefits of different work arrangements are not at all easy to measure, there are other dimensions of the quality of employment which are already documented in hard data on the sex and racial segregation of occupations and workplaces.

### **The Structure and Segmentation of the Labour Force**

The undisputed existence of occupational segregation by sex and race in the British labour market suggests that the model of a segmented labour market is relevant to the contemporary history of the labour force. The notion appears in the literature on both the US economy and developing countries and is now attracting a lot of interest among British sociologists and, for example, the Cambridge Labour Studies Group. The idea of the arena of economic activities being divided into several theatres for non-competing groups has appeal both as a descriptive and an analytic

tool. What the relevant boundaries are, apart from sex and colour is not too clear (neither are all women or 'blacks' necessarily trapped in segregated occupations), nevertheless there would appear to be some sectors of employment where the terms and conditions in a number of dimensions like pay, promotion prospects, on-the-job training and job security are distinctly more favourable than elsewhere.

The model of labour force segments has proved useful in describing the process of aggregate adjustment, with the hypothesis that the sector(s) with the worse jobs act as a sponge or reserve for labour supplies not permanently needed by the superior segment(s). The different sectors are likely to have different technologies and differential rates of adoption of technical progress, and hence the shifting allocation of work between them is part of the story of long-run economic growth. The existence of differential access to employment opportunities is also an important element in the explanation of inequality and social stratification.

The effect of labour market stratification on social stratification, and therefore its implications for social policy depends on the extent to which individuals and families of individuals remain in the same regions of the job market over time. There is scope for research on individual work histories to investigate this hypothesis, provided data about employment histories is collected in such a way as to identify or approximate the relevant barriers. The existing social mobility studies of men make use of various occupation-based classifications. These classifications are less suitable for describing salient boundaries in the experience of women in the labour market, so the agenda of research in this area involves development of the description and classification of women's jobs as well as the longitudinal analysis of women's individual occupational mobility and the joint job histories of spouses and their children.

Another research question is to ask why these segments have appeared and what is their function. Historical research on how and where they appear may throw some light on this. The process by which employers acquire information on potential employees and workers get information about particular jobs may also help explain the perpetuation of unequal access to the labour market and is another topic for both contemporary and historical investigation.

#### **Remuneration as a research tool**

A simplifying device open to the measurement of the quality of the labour force is to aggregate the heterogeneous bundle of labour services being exchanged in economic activities at its market value, following the National Accounting

convention for output. It also aids the commentary to assume that wages and salaries represent labour's contribution to production, and that relative wages represent relative productivity. People who are not professional economists find it hard to suspend disbelief in this particular simplification of reality. Labour of equivalent productivity may be paid at differing rates, reflecting imperfections in either the product or labour market, where bargaining power and access to jobs differ. Labour that is actually quite variable in quality may be similarly remunerated, because, for example, of inadequate information about who is producing what. The non-cash elements in remuneration and any premia paid for particularly unpleasant conditions or unsocial hours also complicate the picture. We have noted above that pay differentials may in part reflect differential ability to appropriate rather than produce. While research on the aggregate contribution of the quality of labour must probably proceed on heroic assumptions about its valuation, research on the structure of labour markets should demonstrate how seriously misleading the use of market prices would be at different points in time - and in the best possible of worlds suggest what sort of corrections would be appropriate.

It would be a pity to abandon attempts to quantify the quality of labour. Expenditure on the quality of people and of their working lives has indisputable direct 'consumption' benefits, it is also however likely that it has a future 'return' in higher productivity, so some of it at least meets the description as 'investment in human capital'. What remains an open question is how great is the investment effect? How much is productivity enhanced? Who reaps the benefit? A similar set of questions arises about the future productivity consequences of interruptions in employment histories. The answers would tell us whether there were efficiency as well as equity gains to redistribution of jobs among individuals to avoid long spells of unemployment or the long spells away from the labour market for women implicit in many families' sex division of labour.

Neither the concept of human capital nor that of labour market segmentation is immune from criticism. As analytic constructs, both have definitions which can mean all things to all people. As empirical tools, investigators of the real world inevitably find that its complexities are hard to force into academic categories. Nevertheless both ideas bring insights to the analysis of the labour force and its history, which, particularly if they can be synthesised, have not yet been fully exploited.

### III RESPONSES TO CHANGE

The productivity of the labour force and international competitiveness depend upon the diffusion of new methods. Research could certainly shed further light on the determinants of the rate of diffusion. In particular, how much does the openness of the economy to trade affect diffusion? Does the decentralised structure of collective bargaining arrangements impede the introduction of new methods of production? What are the implications of technological changes for skill requirements and for training? What are the best arrangements for providing the requisite training (e.g. should it be left to employers)? Is the rate of diffusion of new methods reduced by shortages of people with appropriate skills? Is the rate of invention and innovation affected by investments in human resources? To what extent does non-pecuniary remuneration like non-transferable pensions and company cars inhibit entrepreneurial activity, and job mobility toward growing industries?

We will not attempt to add to the discussion of research issues relating to how macro-economic policies or wage flexibility could reduce the present and prospective excess supply of labour in the British economy. Changes in the organisation of work, particularly the relation between jobs and hours, may however be able to play a role in redistributing the excess supply of labour hours among people. Some idea of the feasibility and consequences of various types of hours flexibility may be gained from an investigation of the dramatic increase in part-time working which occurred during the 1960s and the 1970s and previous reductions in the full-time working week. In particular, what caused employers to offer jobs on a part-time basis? Research could also investigate the costs and benefits to employers and employees of more part-time jobs and their sensitivity to social security and tax rules.

An important research issue, which is related to current problems of youth unemployment, concerns the labour market responses to changes in the population's age distribution. In particular, how do changes in the supply of particular demographic groups in the labour force (e.g. young people) relative to others affect their relative earnings and their unemployment rate relative to others? An issue closely related to this question is the substitutability/complementarity in production between demographic groups, particularly between women and young people. To the extent that the burden of adjustment falls on unemployment rates, what is the impact on total unemployment?

Adjustment by employers and people to conditions of excess supply or demand in local labour markets has been a long standing research issue. Quite a lot is now known about the impact of housing tenure on the likelihood, distance and direction of people's residential mobility, but there is less known about the effect of women's lifetime labour force attachment and women's career choices, particularly wife's earnings relative to her husband, on family migration. Changes in divorce and marriage patterns may also be changing the mobility of the population. There is also the question of the extent to which the spatial distribution of earning opportunities affects the destination of migrants. A very large proportion of short to medium distance movement is made to implement housing choices, with no immediate change of job. Much of this movement has a decentralising character. To what extent do 'jobs follow people?' This is part of an important, more general research issue concerning the factors influencing the location of economic activities of various types. There is at present little direct evidence on this issue.

## CONCLUSION

Human resources represent a national asset. Wealth is not only created in the industrial sector. There is a return to the nurture and maintenance of people and their productive capacities. The benefits of this return accrue primarily to the individuals so endowed. Where these capabilities are deployed in non-market activities, the beneficiaries can also include the members of their family and the community. If they enter market production, the owners of capital, other workers, consumers or the community at large (via taxation or externalities) may also share in the result. A review of long-term trends from the perspective of human resources would synthesise the classic "Condition of the People" question with that of more narrowly defined economic history. It is the challenge of this part of the research programme to attempt to document the complementary growth of human and non-human resources. This would provide insight into the long-term process of economic development both in Britain and elsewhere.





