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The patterns of job expansions in the USA: a comparison of the 1960s and 1990s

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This paper examines the quality of jobs generated during periods of job expansion from the 1960s through to the 1990s in the USA. The central results of the study are: first, the long 1990s economic boom produced a pattern of asymmetrically polarized job expansion: very strong expansion of jobs in the top tier of the employment structure combined with very limited growth in the middle. Secondly, while job growth at the top was strong in the 1990s, the overall pattern of job expansion was much less favorable for the labor force as a whole than in earlier expansions. Thirdly, there has been a dramatic change in the racial and gender patterns of job expansion since the 1960s: gender differences in job expansion were very sharp in the 1960s and quite muted in the 1990s, while the racially polarized character of job expansion has increased, especially at the bottom of the employment structure. Finally, immigration, especially of Hispanics, is deeply connected to the employment expansion in the bottom tiers of the employment structure. Underlying these descriptive patterns are dramatic changes in the sectoral patterns of job expansion in the 1990s compared with the 1960s: the much slower growth of middle-level jobs in the 1990s is rooted in the decline of manufacturing; the stronger growth of bottom-end jobs is rooted in accelerated growth of retail trade and personal services in the 1990s; and the very strong growth of high-end jobs is rooted in high tech sectors.

Keywords: jobs, job growth, employment, inequality
JEL classification: J21 Labour force and employment, size, and structure

1. Introduction

The 1990s witnessed the most extended period of sustained economic growth, and with it employment expansion, in the USA in the twentieth century: the 120 months of expansion surpassed the previously longest boom of 106 months in the 1960s.

While no one disputes the fact of this enormous employment expansion, there is considerable disagreement over its character and implications. Two images have dominated both scholarly analyses and the popular media. One image characterizes this expansion as dominated by the creation of McJobs—low-paid, low-security, dead-end service sector jobs. The 1990s is seen as a continuation, perhaps in some ways even an intensification, of trends already present in the 1980s of increasing inequality, transfers of well-paid industrial jobs to the third world, wage stagnation for the large majority, and real economic improvements limited only to the highest tiers of the employment structure. As Robert Kuttner (1994, p. 16) wrote in *Business Week* in the first Clinton Administration:

> As labor day approaches the economy is generating jobs—4 million since President Clinton was elected—but too few good ones. If anything the trends of the 1980s have intensified: astronomical earnings gains for the economy's superstars. In the middle: relentless downsizing, with new pressures on once-secure professionals as well as depletion of solid blue-collar jobs. At the bottom: growing part-time and temporary hires, low wage jobs in services, especially retailing, and dismal starting wages.

The other image sees the expansion as a job creation miracle, reflecting the emergence of a dynamic 'new economy' of well-paid jobs, deepening prosperity and enhanced opportunities. As an advertisement placed by the Pfizer corporation in *The Economist* in 1999 declared:

> But what about the quality of the new jobs created? The figures about the American labour market tell us a quite different story from the 'trash-job-and-working poor' litany that we so often hear. Since 1983 about 50 percent of the new net jobs created in the U.S. economy—about 15 million—were in the managerial and professional sector, and adding the medium skilled occupation, the figure rises to over 80 percent. Furthermore, around 70% of the new net jobs were in occupations remunerated above the median income for all full-time employees. (Rojas, 1999)

One might have thought that with such divergent descriptions of the employment expansion there would be a great deal of academic research carefully charting the patterns of job creation in the 1990s. This is not in fact the case. There is a large body of research examining individual income and earnings inequality and how this has changed in recent decades (e.g. Gottschalk, 1997; Morris and Western, 1999; Mishel *et al.*, 2001), and studies which chart the broad trends of expansion and contraction of employment by economic sectors (Plunkert, 1990; Godbout, 1993; Levy, 1998; Meisenheimer, 1998), as well as numerous technical reports from the Department of Labor about employment trends and prospects for different kinds of occupations (Rosenthal, 1995; Ilg, 1996; Bureau of Labor Statistics, 2002),

but there is almost no research that looks in detail at the overall distribution of the quality of jobs generated in the 1990s employment expansion as such (for exceptions see Council of Economic Advisors, 1996; Farber, 1997; Ilg and Haugen, 2000), and none that we know of that compares the 1990s job expansion with earlier expansions, especially the long, robust employment expansion of the 1960s. The central objective of this paper is to fill this gap in the existing literature.

The central punchline of this paper is that the employment expansion in the 1990s can be described as a pattern of asymmetrical polarization: very strong growth in the top tier of the employment structure, moderately strong at the bottom and extremely weak growth in the middle. This is a novel pattern. The employment expansion of the 1960s constituted a non-polarized upgrading of the employment structure, and the expansions of the 1970s and 1980s involved relatively even job growth across the employment structure. In the 1990s, for the first time, there was sharply slower job growth in the middle. The task of this paper is to carefully describe these patterns and provide some preliminary explanations for the changes.

We begin in Section 2 by elaborating a method for studying changes in the quality of employment that focuses on jobs rather than simply on individual earnings. Most research on inequality and changing patterns of inequality focuses on distributions of earnings across individuals and income across households. For reasons we elaborate below, we believe it is also important to study the distribution of jobs as such and how this changes. Section 3 uses this method to chart the changing patterns of job expansion and contraction in the USA since the early 1960s. Since these results are not available in the literature, we devote a considerable amount of space to fine-grained descriptions of these patterns. Section 4 then provides some preliminary explanations of the patterns we observe. In particular, we examine the extent to which the dramatic changes in the pattern of job expansion in the 1990s compared with the 1960s are driven by changes in the sectoral distributions of employment.

2. Methodological issues

2.1 A methodology for studying job expansions and contractions

The methodology we use is an extension of the empirical strategy of one of the few pieces of research that examined the overall pattern of job expansion in part of the 1990s economic boom, research done under the supervision of Joseph Stiglitz when he was chairperson of the President's Council of Economic Advisors in the first Clinton Administration. Stiglitz studied the job expansion over a fairly short span of time, 1994–6. His objective was to see what proportion of the job expansion in this period comprised 'good jobs' and what proportion 'bad jobs'.[1]

[1] Throughout this paper we will use the expressions 'job expansion' or 'job growth' to mean net job expansion (i.e. the net result of job creation and job destruction).

His method was the following: using Current Population Survey (CPS) data, he constructed an occupation-by-sector matrix with 45 occupations and 22 sectors. This yielded a total of 990 potential kinds of 'jobs', as represented by the cells in the matrix, many of which were empty or near-empty. After eliminating the small cells, there were some 250 or so jobs left in the analysis, accounting for roughly 95% of total employment. The median weekly earnings of full-time employees in each cell were then calculated and job quality was defined by the distribution of these cell medians. In the simplest model, good jobs were defined as all cells with median earnings above that of the median cell and bad jobs were defined as cells with median earnings below it.[2] The change in the number of people in each cell was then calculated for the period 1993–5. The central finding was striking: roughly 70% of all job growth was among the 'good' jobs, and roughly 50% of all job growth was in jobs in the top three deciles of the median-earnings-ranked job distribution. The conclusion offered in the report was that the job expansion was strongly weighted towards the creation of good jobs.

While the Stiglitz paper received a great deal of press attention at the time, it did not provoke a body of subsequent research. We therefore do not know whether the patterns he observed at the very beginning of the job expansion of the 1990s held for the entire decade, or whether the 1990s expansion was in any way unusual compared with earlier periods of job growth.

Here we extend and refine Stiglitz's analysis in several ways: first, we adopt a much more fine-grained set of categories than Stiglitz used in his analysis, and use these categories to examine the quality of jobs generated throughout the entire 1990s employment expansion, rather than simply in the first two years of the expansion. Secondly, we focus not simply on the question of what percentage of the job expansion consists of 'good jobs', but on the whole distribution of job quality. Of particular concern here is the extent to which job growth has a polarized character. Thirdly, we carry the analysis backwards to the 1960s to see the extent to which the 1990s constitute a distinctive pattern of employment growth. Fourthly, we explore the demographic aspects of the job expansion: the racial and gender composition of the job expansion in the 1960s and the 1990s, and the immigration composition in the 1990s (data on immigration status for job holders are not available in the earlier periods). This further helps us to identify the distinctive characteristics of the two periods of extended employment growth. Finally, as part of an explanation of the changes in patterns of job expansions between the 1960s and 1990s, we examine the sectoral patterns of the two expansions.

[2] The criterion in the Stiglitz study is the median earnings in the median cell, not the median earnings of the labor force as such. In principle, these could be quite different.

2.2 Classifying jobs and measuring 'job quality'

The basic descriptive task of this project is to chart the quality of jobs created in the employment expansion of the 1990s compared with earlier job expansions. To do this we need to solve two methodological problems: first, how we should classify the millions of jobs in the US economy into various general categories; and secondly, how we should measure the quality of jobs so classified. What we want is a typology of types of jobs, and then a criterion for ranking these types of jobs in terms of their 'quality'. Once this is done, we can investigate where in this quality ranking of jobs job expansion is concentrated.

Job classification There are many alternative ways one can classify jobs. In previous work, Wright and his collaborators classified jobs by their class character: working class, manager, employer, etc. (Wright and Martin, 1987; Steinmetz and Wright, 1989; Wright, 1997). For some purposes it would be useful to classify jobs by the type of organization generating the job: government, nonprofit, large corporation, small business, etc. For the purposes of the present investigation, we follow the basic strategy adopted in Stiglitz's analysis and classify jobs by economic sector and occupation. For the analysis of job expansion in the 1980s and 1990s we construct a labor force matrix of 104 occupational categories by 23 economic sectors. We treat the 2392 cells of this matrix as types of jobs. Examples of the cells in this matrix include: janitors in business repair services; bus and truck drivers in retail trade; secretaries, typists and stenographers in nondurable manufacturing; and financial managers in wholesale trade. Even in a very large data set, many of these cells have very few people in them, although surprisingly few are completely empty. While we include all the job cells in our analysis that have any people in them, about 479 of these job types account for over 90% of total employment.[3] The available data for the 1960s and 1970s did not allow for so fine-grained a set of occupational distinctions, so in the earlier period we use a job matrix of 30 occupations by 23 economic sectors, which generates a total of 690 potential types of jobs.[4]

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[3] While it is the case, of course, that the estimates of median earnings will be highly unstable for cells in which there are few cases, these cells also contribute virtually nothing to the patterns of job growth and thus these measurement problems cannot affect the overall results. The patterns are unchanged if small cells are dropped.

[4] For details of the categories used for both the earlier and later periods see Wright and Dwyer (2003, appendix A). The basic patterns of results in the 1980s and 1990s data were substantively the same when we used the simpler classification scheme used in the 1960s, so this shift in categories does not significantly affect our conclusion.

Job quality The second task is to rank-order the jobs in the occupation-by-sector matrices from the 'best' type of job to the 'worst'. This immediately raises the problem of what precisely one means by 'job quality'. There is a wide range of heterogeneous attributes of jobs which matter to people and thus contribute to their desirability. Some of these attributes can be measured with readily available data—such as earnings, fringe benefits, educational levels of incumbents of jobs; others are in principle measurable, but data are not readily available—such as opportunities for advancement, job security and levels of authority; and some involve job attributes that are difficult even in principle to measure—such as stress levels, degree of personal autonomy within the labor process, or opportunities for social connectedness on the job. Ideally, in order to fully assess the extent to which economic growth in the USA is generating good or bad jobs, one would want data on a full range of such attributes. Such data are simply not available for any extended periods of time for the entire employment structure. In practice, therefore, if we want to evaluate trends in the entire employment structure, the only possibility is to measure job quality primarily on the basis of earnings generated by jobs. The cells in the occupation-by-sector matrix are thus rank-ordered on the basis of median earnings of incumbents of the cells. The details of the procedure used is explained below. To the extent that the various other desirable features of jobs are correlated with earnings, this can be considered a proxy for a more general *Gestalt* of job quality attributes. Even if this were not the case, earnings are a sufficiently salient aspect of job quality that it is important to know the distribution of well-paying compared with badly paying types of jobs in the employment expansion.[5]

Why study growth of earnings-indexed jobs rather than simply individual earnings? With this set of job categories rank-ordered by median earnings, we can determine what proportion of job growth occurs among the higher-ranking rather than the lower-ranking categories of jobs in this list. But why go through the step of assigning median earnings to types of jobs and then examining the contributions of these categories to job growth rather than simply examining the changes in the number of individuals at different points in the earnings distribution? Is it not better to know, say, that 20% of the job expansion was among individuals earning more than $25/hour than to know that 20% of the job expansion was in job categories whose median earnings were above $25/hour? Since there is a distribution of earnings around the median within each of the job cells, these two statistics could mean very

[5] A comparison of patterns of job expansion in the 1990s using earnings as the basis for indexing jobs and a number of other indicators—SEI, education and unemployment rates—is presented in Wright and Dwyer (2003, appendix B).

different things in the lives of the people holding these jobs. In the job category analysis, for example, it could conceivably be the case that while 20% of the expansion of jobs was in cells with medians above $25/hour, most of the job expansion in these cells was in individual jobs that earned below $15/hour. It would therefore seem that if the basic point of caring about the quality of jobs is its impact on the economic conditions of the lives of people in those jobs, then focusing directly on individual earnings would be more relevant than examining broader categories of jobs indexed by their median earnings.

There are two reasons why we feel it is important to study the growth of job categories indexed by median earnings rather than simply studying the changing distribution of the individual earnings themselves. First, we believe that the cells in the occupation-by-sector matrix tap real categories of jobs created in an economy. Jobs are not just employment contracts to 'work' at a given earnings level; they are contracts to perform sets of tasks to produce specific outputs. The occupation-by-sector categories, therefore, map this task dimension of jobs. Secondly, we believe the earnings potential embodied in an employment expansion is better measured by the growth of job categories than simply by individual earnings. A job type, defined by cells in a 100 occupation by 23 sector matrix, can be thought of as demarcating labor market opportunities for a particular kind of employment with a particular earnings potential. The growth of managerial occupations in the finance, insurance and real estate sector constitutes the growth of good jobs because the earnings potential of this specific job type is high, even if many of the jobs that may be created earn below the median of that category. The growth of jobs in specific locations within the earnings-ranked job distribution may therefore give a better picture of the longer-term real economic impact of job growth than simply the changing patterns of individual earnings.[6]

Although we present data on both job expansions and contractions, we focus primarily on periods of job expansion, especially the 1990s and 1960s. Changes in the overall job distribution are the result of the specific patterns of job creation and destruction, and it could in principle be the case that periods in which the rate of job destruction is greater than the rate of job creation (i.e. periods of net employment contraction) generate bigger changes in job distributions than do periods of employment expansion. In the four decades under study here this is not the case: there is much less job decline in periods of contraction than there is job growth in periods of expansion, and the variation in net changes across the job distribution is much more dramatic in periods of expansion than in those

[6] This will be especially the case where there are relatively steep seniority–wage trajectories in a job, since in such cases newly hired younger people in a period of rapid job growth are likely to have lower earnings than the median person already in the job.

of contraction. It thus appears that periods of job expansion have a bigger impact on the distribution of quality of jobs and it is for this reason we focus on the expansionary periods.

None of this implies that it is foolish to study the distribution of individual earnings or the growth of employment at specific locations in the individual–earnings distribution. All we claim is that it is also important to understand the patterns of job expansion and contraction across categories of jobs in the job-type–earnings distribution, not simply the individual–earnings distribution.[7]

2.3 Data

The data come from the CPS annual outgoing rotation group files for the period 1983–2000, and from the CPS March annual demographic supplement files for the period 1963–80. Because of problems in data quality, sampling and weights for the early 1960s, we had to begin the analysis of the 1960s job expansion in 1963 rather than in 1961, when the expansion began. Similarly, because of changes in the occupation coding in the early 1980s, we had to begin the analysis for the 1980s expansion in 1983 rather than 1982.[8]

Throughout this analysis we restrict our investigation to jobs held by employees, thus excluding the self-employed. In principle, the problem of job expansion should include all jobs filled by active participants in the labor force, both employees and self-employed. However, the CPS does not contain comparable earnings data for both self-employed and employees, and thus it is difficult to create comparable earnings-based job category rankings for these segments of the labor force. For present purposes, therefore, we restrict the analysis to employees.

We also restrict our attention to full-time jobs. Part-time jobs pose a number of problems for the analysis of job growth. Should a 20-hour-a-week job be considered half a job? If so, should a 60-hour-a-week job be weighted 1.5 in a measure of job growth? If we did this, then in effect the analysis would shift from an investigation of job expansion to person-hours-in-jobs expansion. On the other hand, if we consider a half-time job the equivalent of a full-time job—a job is a job is a job—then the overall patterns of job expansion could potentially be distorted by the presence of jobs filled primarily by teenagers and others with relatively marginal attachments to the labor force in part-time work. Since the 1990s job expansion was

[7] It is important not to interpret the results from the study of patterns of job expansion as bearing directly on the question of changes in income distribution. In principle, one could have absolutely even growth of jobs across the distribution of job types and still have rapidly increasing income inequality—either because the spread of income across job types was increasing or because earnings inequality within job types was increasing.

[8] A detailed discussion of the data is available in Wright and Dwyer (2003, appendix A).

overwhelmingly dominated by the expansion of full-time employment, for the present analyses we restrict the investigation to such jobs.[9]

2.4 Variables

Occupations For the CPS data for 1983–2000 it is possible to construct a quite fine-grained occupational typology. We began with the standard 45-category two-digit occupational variable constructed by the CPS. We then went through each of these categories and examined the median earnings of the three-digit occupations within the broader category. Wherever there were substantial differences in the median earnings among these three-digit occupational categories we tried to group them into more homogeneous subcategories.[10] For example, the CPS two-digit occupational category 'Other Executives, Administrators, and Managers' accounts for just under 10% of all full-time employee jobs in the 1990s. This is a very heterogeneous collection of occupations, ranging from managers of food services with median earnings of $10.25/hour to marketing managers with median earnings over $22/hour. Accordingly, we broke this broad manager occupation category down into eight distinct manager occupations. The result is a 104-category occupational variable.

In the 1960s, the CPS data only contains a 30-category two-digit occupational variable. For the earlier period, therefore, we were not able to generate this refined set of occupational categories.[11]

Economic sectors The classifications for industry change less over time than the codes for occupation. We coded industries into 23 categories, which can be created for each period. Because of minor changes to the three-digit Census classifications we used to create the 23 categories, a few of the sectoral categories are not perfectly comparable across all expansions, though they are very close.

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[9] Contrary to much popular opinion, part-time employment did not increase as a proportion of the labor force in recent years and in fact declined in the course of the 1990s expansion from 18.1% of employment in 1992 to 16.2% in 2000 (Bureau of Labor Statistics data). For a discussion of trends in part-time work, see Levenson (1996).

[10] There is a certain arbitrariness in any effort at disaggregating broad occupational categories into more homogeneous components. We did not adopt a mechanical decision-rule, since we needed to balance pragmatic considerations about generating reasonably large categories, conceptual issues of the homogeneity of the content of different occupations and empirical issues of their homogeneity with respect to the criterion of median earnings. In order to see if our specific disaggregation choices affected the results, we examined the general patterns of job growth under a number of different occupational breakdowns, and in no case were the basic patterns substantially affected.

[11] For the full list of occupational codes for each period, see Wright and Dwyer (2003, appendix A2).

We also constructed, for certain specific purposes, two more aggregated categories. The first, 'personal services', consists of four sectors from our full typology: private household service; repair services; entertainment and recreation services; and assorted personal services (which include hotels; laundry; barber and beauty; and miscellaneous personal services). The second, which we refer to as the 'high technology domain', consists of all jobs in high tech sectors plus all high tech-using occupations in non-high tech sectors.[12]

Earnings We use hourly earnings to index job quality rather than weekly earnings, as in the earlier Stiglitz report. The results are not substantively affected by this shift, but we felt that hourly earnings was a better measure of job quality. In the data for the 1980s and 1990s, the CPS collected earnings per hour for hourly workers and per week for all others. To calculate hourly wages, we divide the 'usual weekly earnings' of non-hourly workers by their 'usual hours worked per week'. Within each expansion, earnings were converted into constant 2000 dollars. In the 1960s respondents were not directly asked about their hourly earnings for their current job; instead, they were asked about their earnings for the longest job held the previous year. We therefore had to use this retrospective data to calculate the median earnings of the cells in the occupation-by-sector matrix based on data for people who had not changed jobs since the previous year. It is possible that the restriction of the sample to people who had not changed jobs could bias the estimates of median earnings, since on average one might expect that people in any given job category who change jobs have lower earnings than those who do not change jobs. In order to assess this bias, we used March CPS files to analyze the 1990s and estimated wages using the same method we used in the 1960s, restricting the sample to people who had not changed jobs. Our results using this method for the 1990s were similar to our results produced with the ORG files, indicating that the method used in the 1960s does not distort the results.

Median earnings of job types Median earnings for cells in the jobs matrix are calculated separately for each of the periods of job expansion examined (1963–70, 1975–80, 1983–90, 1992–2000). In each period we combine all of the relevant CPS samples across all the years within the period and then calculate median earnings in constant dollars for this multiyear sample for each period. This creates a very large sample for each period, so that there are significant numbers of cases in nearly all cells of the matrix. This procedure also means that if earnings change in a cell over the period of a job expansion, the rank-order position of the job in the hierarchy of job quality will be based on a weighted average

[12] See Wright and Dwyer (2003, appendix A2) for details of the sector coding.

of the earnings over the period (weighted by the number of people in the job in each year of the CPS sample). We found that although median earnings of job types do change over time, the rank order of cells hardly changed at all, and this is all that really matters for our analysis. For example, in the 1992–2000 job expansion, the correlation of quintile or decile position of a job cell in 1992 (calculated on the basis of only 1992 data) and those same cells in 2000 is 0.99, and the correlation of cell median earnings (for cells with at least 50 people in the 1992 CPS sample) is 0.95.[13]

2.5 Strategy of analysis

Our empirical goal is to measure the relative contributions to job expansion of jobs of differential quality defined by the median hourly earnings of job categories. Our strategy of analysis is to rank-order these jobs from the highest median hourly earnings to the lowest and then group this rank-ordered set of cells into five ordered categories each containing as close as possible to 20% of the employment at the beginning of a job expansion.[14] We refer to these aggregated categories of jobs as 'job quality quintiles'. The bottom quintile contains the roughly 20% of the employment at the beginning of a job expansion who are in the jobs with the lowest median earnings, the highest quintile contains the roughly 20% of the employment in jobs with the highest median weekly earnings and so on. To convey a sense of what sorts of jobs fall within each of the quintiles, the three largest job categories within each quintile in the 1990s are given in Table 1.

The rank-ordering of job categories and their aggregation into quintiles is done separately for each period being studied. Because of the differential growth and decline of specific job categories over time, a few jobs do change their location within this job-earnings distribution from one period to another. In no instance, however, did a job category move either up or down more than one quintile in the distribution. In any case, the interpretation of the job quality quintiles remains the same even if there are such shifts in detailed jobs.

In order to facilitate comparisons across demographic categories, when we analyze race and gender compositions of jobs we use the same job aggregations as we use in the total employment sample. That is, we do not recalculate median earnings

[13] For details of measurement issues connected to the earnings variable, see Wright and Dwyer (2003, appendix A3).

[14] Since jobs come in lumpy units, it is not possible to aggregate the rank-ordered jobs into groups each containing exactly 20% of employment. Thus, for example, of the five quintiles in 1992, one (the 4th quintile) contained 21.3% of employment and one (the highest quintile) 18.7%. None of the patterns we will be examining are significantly affected by these deviations from equal quintile categories.

Table 1 Characteristics of jobs in each job quality quintile

1992–2000 job quality quintiles	1992–2000 median hourly earnings ($)	Three largest jobs within quintile		Number, 1992	Number, 2000	% of employment in quintile, 1992	% of employment in quintile, 2000	Number of jobs in quintile
		Occupation	Industry					
Lowest quintile	7.00	Cooks	Retail trade	1 112 421	1 366 377	20.1	20.1	305
	8.00	Health services (aides)	Other medical service	894 857	1 153 608			
	6.72	Cashiers	Retail trade	804 451	1 124 075			
Second quintile	11.30	Sales supervisors/ proprietors	Retail trade	1 679 872	2 171 198	20.3	20.0	279
	10.20	Assemblers	Manufacturing, durable	804 837	936 770			
	10.53	Retail sales: durables and misc.	Retail trade	753 128	1 011 751			
Third quintile	12.54	Bus and truck drivers	Transportation	1 035 319	1 334 783	19. 5	17.4	346
	12.68	Carpenters	Construction	567 187	828 040			
	12.69	Top tier clerks	FIRE	524 112	545 124			
Fourth quintile	16.88	Elementary school teachers	Educational service	1 769 063	2 267 855	21.3	21.1	329
	17.87	High school teachers	Educational service	1 031 006	1 137 167			
	16.73	Police and fire, public service	Public administration	832 736	1 040 199			
Highest quintile	20.07	Registered nurses	Hospital service	915 786	957 726	18.7	21.3	291
	23.46	Managers, corporate misc.	Manufacturing, durable	656 531	941 792			
	20.08	Public administration	Public administration	551 314	647 130			

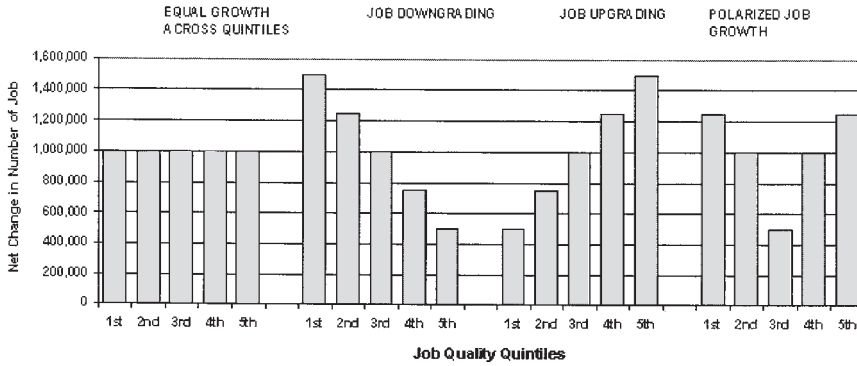

Figure 1 Hypothetical patterns of net job expansion.

of categories in the job matrix, nor recalibrate the job quality quintile categories within given demographic groups.

We use these job quality quintiles to generate graphs showing the distribution of net changes in number of jobs within each quintile during periods of job expansion and contraction. Figure 1 illustrates four different ideal-type patterns we might find in these results. The numbers in these graphs refer to net job expansion rather than job creation *per se*. That is, employment growth is always a simultaneous process of the creation of new jobs and the destruction of already existing jobs within any given job category. When we observe that a particular cell in the occupation-by-sector job matrix increases by 10,000 over a period of time, this could mean the creation of 25,000 new jobs and the destruction of 15,000 previously existing jobs. All that we observe is the net effect of these two processes.

In the hypothetical illustrations in Figure 1, there is an expansion of 5 million jobs in each of the graphs, but the pattern of job expansion varies sharply across the different cases. The McJobs image of job growth looks something like the second graph in this figure: job growth is concentrated in the lower deciles of the employment structure with only marginal growth among jobs in the upper tiers. The jobs miracle vision is closer to the third graph. The image of highly polarized job growth in some accounts of the 'New Economy' (e.g. Reich, 1992) would look something like the fourth graph. Our primary task in this paper, then, is to chart in this manner various aspects of the patterns of job expansions since the 1960s.

3. Descriptive results: patterns of job expansion

3.1 Overall patterns of job expansion in the 1990s

Over 15 million full-time jobs were added to the US employment structure in the period 1992–2000. Figure 2 indicates that job growth was especially strong in the top quintile and especially low in the middle quintile of the employment

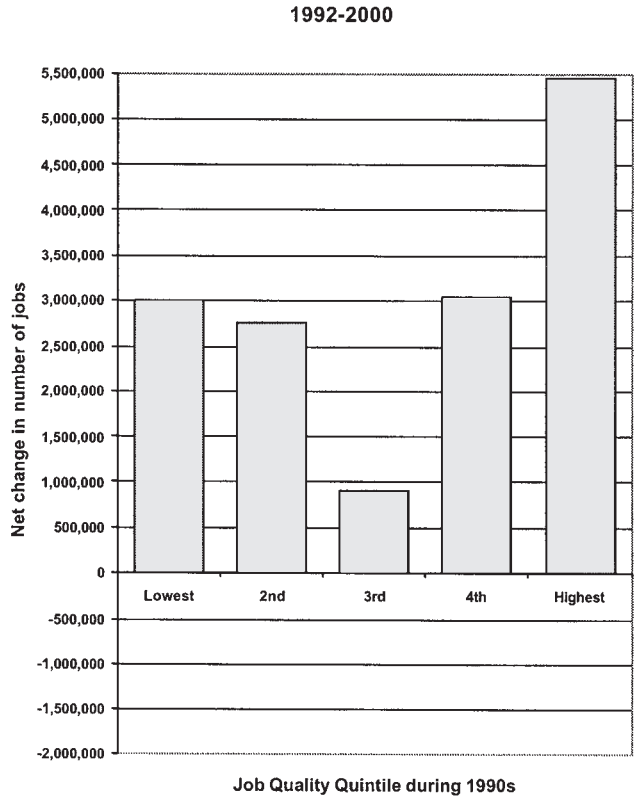

Figure 2 Pattern of job change, 1992–2000.

structure.[15] These results are broadly consistent with those in the Stiglitz study: in his research, using cruder categories over a much shorter period, just under 70% of the job expansion occurred in jobs above the median (i.e. in the top five job quality deciles), whereas in our analysis for the entire expansion of the 1990s the comparable figure is just under 63%. But the results also indicate something not revealed in the Stiglitz analysis, namely that job growth was especially weak in the middle of the employment structure: only 6% of the job expansion occurred in the middle quintile. The result is therefore a polarized pattern, albeit one weighted toward the better jobs.[16]

[15] Job growth was especially marked in the top decile, which accounted for 3.2 million of the nearly 5.5 million job expansion in the top quintile. The bottom decile also showed relatively strong growth: 1.75 million jobs of the 3 million in the bottom quintile occurred in the bottom decile.

[16] It might be objected that these results are affected by (i) the exclusion of part-time work, and (ii) by the growth of the kinds of jobs filled by young workers rather than the core adult part of the labor force. In analyses not shown here, neither of these factors account for the patterns observed. For details, see Wright and Dwyer (2003, appendix C).

3.2 The trajectory of job expansions: 1960s–1990s

To fully assess the character of the 1990s job expansion it is important to compare it with earlier episodes of sustained job creation. Figure 3 presents the patterns of job expansion for each job expansion and contraction since the 1960s for which we have reliable data.[17] Four features of these patterns are important to note. First, the 1990s expansion is the first in which a clear polarized pattern of job growth occurs. Even in the 1980s, a period in which there was a sharp rise in earnings inequality, it was not the case that job growth in the middle of the employment structure was lower than at the tails of the distribution.[18] Secondly, in every expansion, job growth is highest in the top quintile of the employment structure. Indeed, if we further break down the results into deciles, in every period of expansion job growth is strongest in the top decile. This is thus not a unique feature of the 1990s expansion. What is new in the 1990s expansion is the extent to which the top quintile grew disproportionately relative to other quintiles: in the 1990s the ratio of the growth of top quintile to the fourth quintile was 1.8:1, whereas in the three earlier periods of sustained job growth the ratios were between 1.3:1 and 1.4:1. Thirdly, the contribution of the bottom quintile of jobs to total job growth increases dramatically over time: in the 1960s just under 10% of the total job growth occurred in the bottom quintile of jobs; in the 1970s the figure was 15%; and in both the 1980s and the 1990s, this figure was 20%. Fourthly, if you look at the trends across this entire period, the patterns of job expansion in the 1970s and 1980s appear to be intermediary between the patterns of the 1960s and 1990s: from a strong, unequivocal pattern of job expansion upgrading in the 1960s, to muted upgrading in the 1975–80 expansion, to a relatively flat pattern of job growth in the 1980s and, finally, the polarized pattern of the 1990s. The 1970s and 1980s therefore appear as a kind of transition from the 'golden age' of upgrading job expansion of the 1960s to the polarized pattern of the 1990s.

3.3 Race and gender patterns of job expansion, 1960s vs. 1990s

The quality of jobs created in employment expansions matters not simply because employment is the principle means by which individuals acquire their standards of

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[17] As explained in detail in Wright and Dwyer (2003, appendix A1), there are a number of gaps in this time series: (i) the data were unreliable for the early 1960s, so we had to begin the 1960s expansion in 1963 rather than 1961; (ii) there were also data problems in the early 1970s—there was a short contraction and short expansion in this period—so we begin the 1970s data with the 1973–4 contraction; (iii) the occupational categories changed in 1983, so we begin the 1980s expansion in 1983 rather than 1982.

[18] As noted earlier, increasing income inequality is in principle consistent with a completely flat pattern of job growth across job quality quintiles because (i) the income spread between the best and worst job types could be increasing even if both types of jobs are growing at the same rate and (ii) increasing earnings inequality can occur within job types.

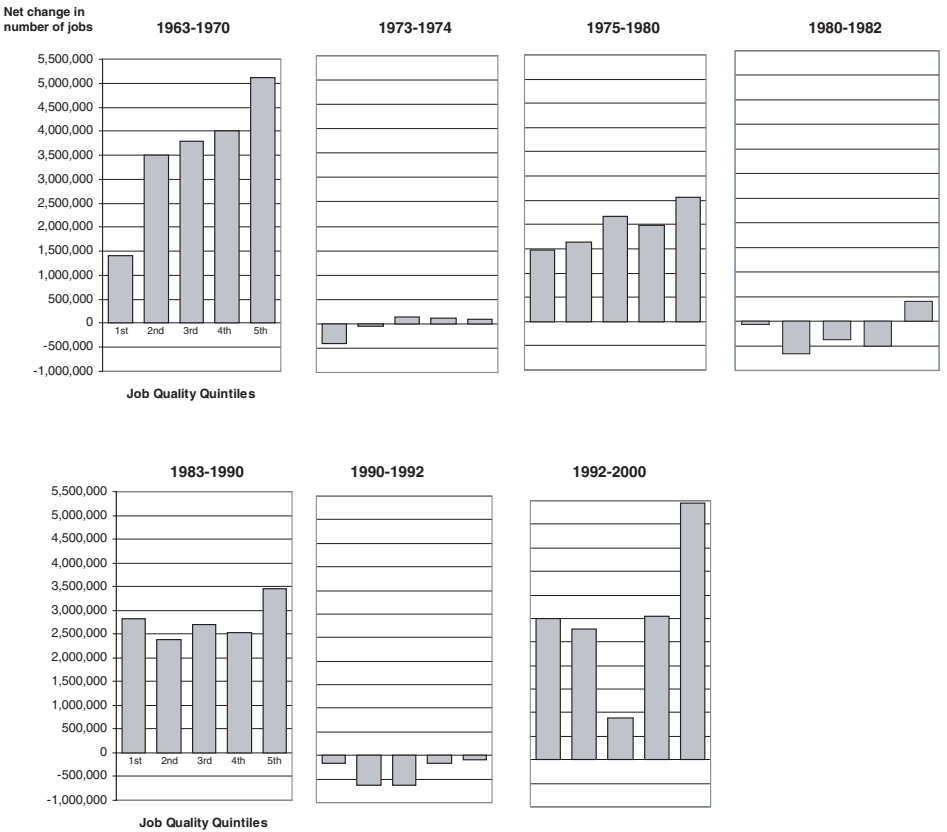


Figure 3 Patterns of job change during periods of expansion and contraction by job quality quintiles, 1960s–1990s.

living, but also because of the ways it reinforces or undermines other dimensions of social inequality. In particular, periods of robust job expansion in the upper tiers of the employment structure potentially offer relatively favorable conditions for disadvantaged social categories to make especially rapid gains, since in these conditions there is less of a zero-sum character to their movement into relatively privileged jobs. Figures 4 and 5 present the patterns of job expansion within race/gender categories in the 1960s and the 1990s. In the 1960s CPS data Hispanics are not distinguished from non-Hispanic whites, and thus only two racial categories are reported: whites and African Americans. In the 1990s Hispanics and non-Hispanic whites are treated as separate categories.

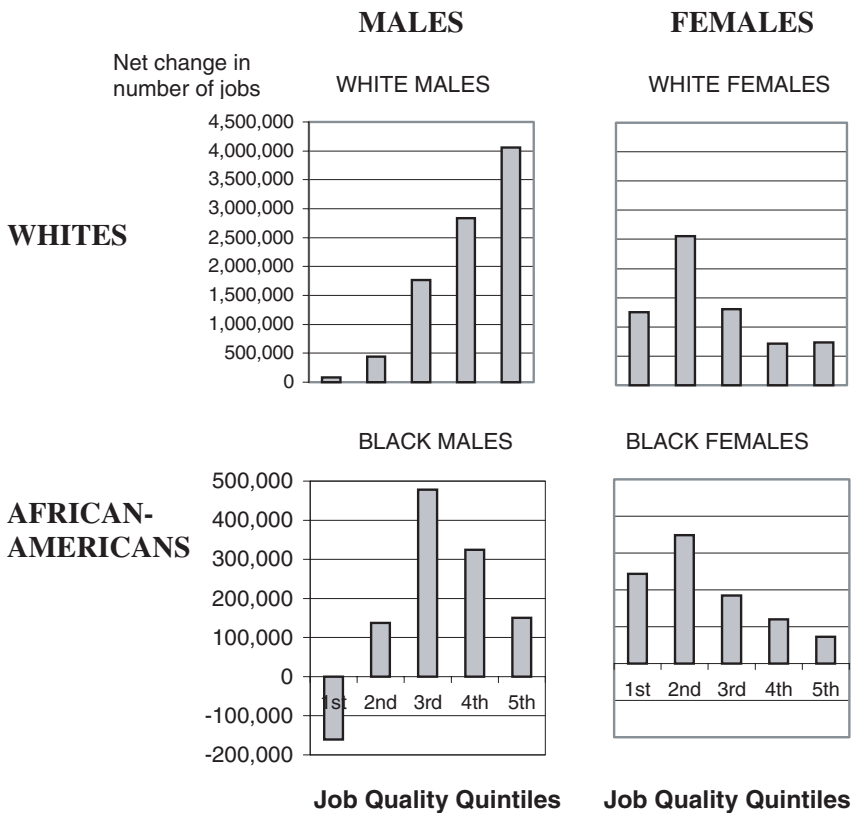


Figure 4 Patterns of job growth in race by gender categories in the 1960s.

Note: The scales for number of jobs have been adjusted for each racial group in order to facilitate comparing the profiles of the patterns of job growth across categories.

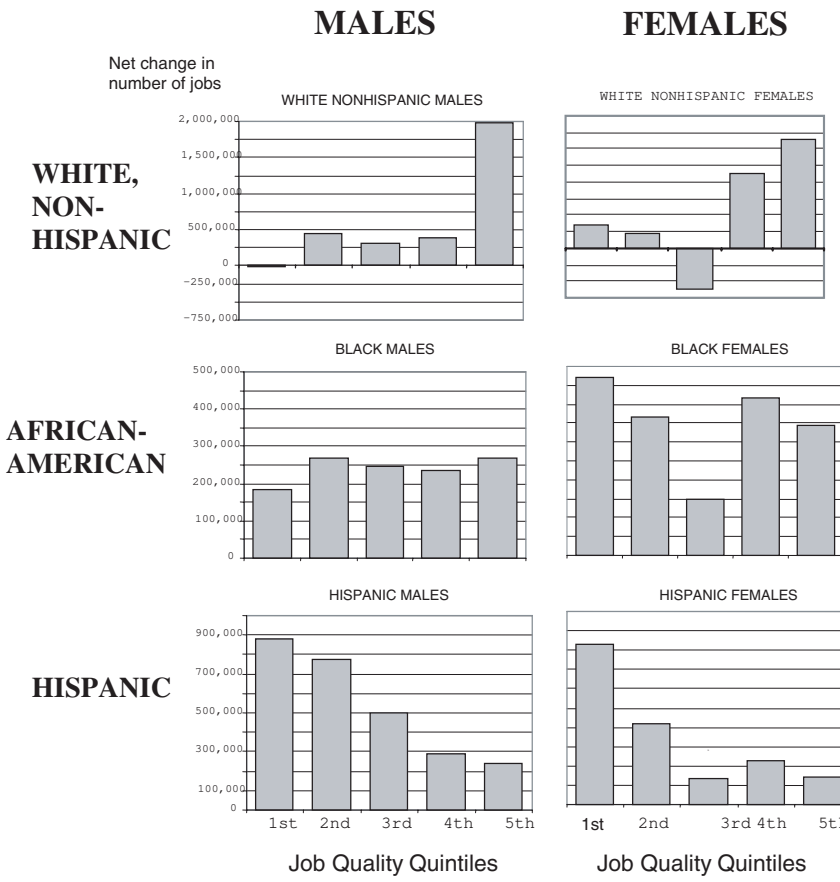


Figure 5 Patterns of job growth among race-gender categories, 1990s.
Note: The scales for number of jobs have been adjusted for each racial group in order to facilitate comparing the patterns of job growth across categories.

The data in these figures indicate a fairly complex set of changes in the demographic patterns of job expansion between the 1960s and the 1990s. One way of characterizing the overall contrast in gender/race patterns between these two episodes of massive job expansion is that in the 1960s gender differences in patterns of job expansion are sharper than the racial differences, whereas in the 1990s the converse is generally the case. In the 1960s the patterns for white and black women are almost identical: job expansion was highest in the second quintile and lowest in the top quintile. Among men, there is some racial difference—among white males job expansion is highest in the top quintile, whereas for black men it is highest in the middle quintile. However, for both white and black men there is very

little (or even negative) job expansion in the bottom two quintiles, whereas this is where job growth is concentrated for women, both black and white. Now, compare this with the 1990s: for both white men and white women, job growth is concentrated in the top of the employment structure; for both Hispanic men and Hispanic women, job growth is heavily concentrated at the bottom of the employment structure. The pattern of job growth among African Americans is also sharply different from that of whites, although in this case there is some gender difference as well: job expansion is polarized among black women (the only demographic group within which there is a polarized pattern), whereas among black men job expansion is fairly evenly distributed throughout the employment structure. Overall, then, relative to the 1960s, the job expansion of the 1990s is less gendered, but more racialized.

The decline in the gender polarization of the job expansion occurs at both the top and bottom of the employment structure. As indicated in Table 2, in the 1960s 79% of the job expansion in the top quintile was filled by men and only 21% by women; in the 1990s the corresponding figures were 56% and 44%. In the bottom quintile, on the other hand, in the 1960s for men as a whole there was a decline in employment, so women accounted for more than 100% of the job expansion in that category. In contrast, in the 1990s, men accounted for nearly 40% of the job expansion in the bottom quintile.

The increasingly racially differentiated pattern of job expansion in the 1990s is concentrated at the bottom and middle of the employment structure, not the top. In fact, if anything, the job expansion in the top quintile is somewhat less dominated by whites in the 1990s than in the 1960s: in the earlier job expansion over 93% of the job expansion in the top quintile was filled by whites, whereas in the 1990s this declined to 68% (or 79.5% if Hispanic whites are added).[19] In the bottom quintile, in contrast, the percentage of the job expansion filled by whites declined from over 90% in the 1960s to around 11% in the 1990s, and in the second quintile from just over 85% to around 24%.

Putting all of these observations together suggests that the aggregate pattern of job expansion polarization we observe in the 1990s in Figure 2 is a highly racialized, but not strongly gendered, pattern.

3.4 Immigration in the 1990s

The striking pattern of employment growth for Hispanics in the 1990s suggests that perhaps a significant part of the employment growth at the bottom of the job structure in the 1990s was due to immigration. Figure 6 shows that this is in fact the case.

[19] It is important to remember that in the 1960s data we could not differentiate Hispanic whites from non-Hispanic, so the categories are not strictly comparable in the two periods. In any case, the percentage of blacks in the job expansion in the top quintile increased from 4.5% in the 1960s to 13.3% in the 1990s.

Table 2 Race–gender distributions (%) within job quality quintiles of job expansion, 1960s and 1990s

Distribution of net job expansion of job quintiles within race/gender categories

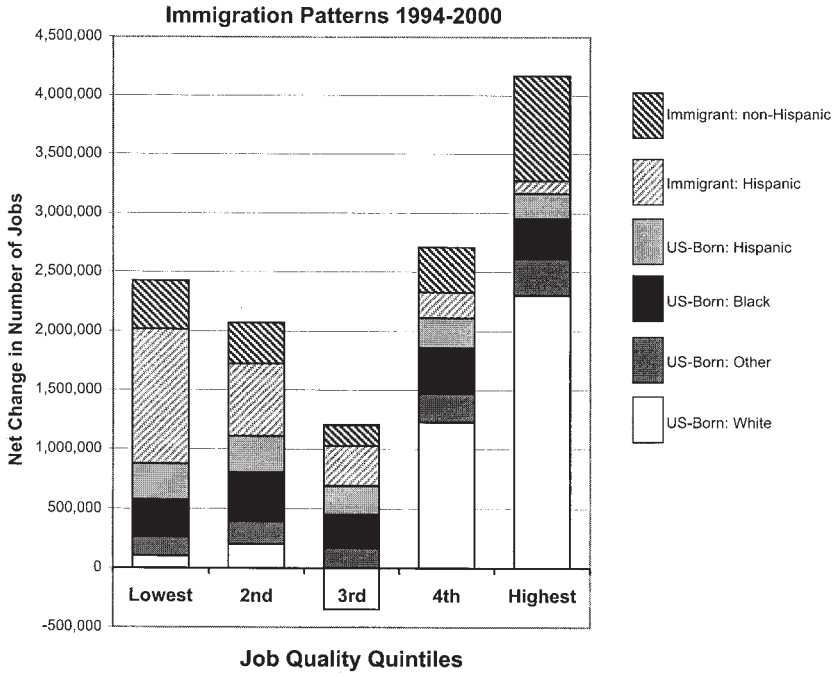
Job quality quintiles	White male	White female	Black male	Black female	Other male	Other female
1960s						
Lowest	0.9	19.1	−17.2	25.1	−18.3	20.9
Second	4.8	39.0	14.7	35.9	1.1	19.4
Third	19.3	19.9	51.4	19.1	35.0	19.9
Fourth	30.9	10.9	34.9	12.4	1.4	9.1
Highest	44.2	11.1	16.2	7.5	80.8	30.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

	White male	White female	Black male	Black female	Hispanic male	Hispanic female	Other male	Other female
1990s								
Lowest	−0.3	12.7	15.3	27.0	32.8	47.4	14.0	23.3
Second	14.5	8.0	22.3	20.9	28.8	24.0	16.4	15.5
Third	9.8	−22.5	20.4	8.6	18.5	7.9	11.2	9.7
Fourth	12.5	41.2	19.5	23.9	10.8	12.8	13.9	20.7
Highest	63.6	60.5	22.4	19.7	9.0	8.0	44.5	30.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Distribution of job expansion of race/gender categories within job quintiles

	White male	White female	Black male	Black female	Other male	Other female	Total
1960s							
Lowest	5.6	88.2	−11.3	17.2	−1.2	1.5	100.0
Second	12.7	72.9	3.9	9.9	0.0	0.6	100.0
Third	46.7	34.4	12.6	4.9	0.9	0.5	100.0
Fourth	70.8	17.9	8.1	3.0	0.0	0.2	100.0
Highest	79.3	14.3	2.9	1.4	1.5	0.6	100.0

	White male	White female	Black male	Black female	Hispanic male	Hispanic female	Other male	Other female	Total
1990s									
Lowest	−0.3	11.4	28.9	27.2	6.0	15.5	4.6	6.7	100.0
Second	16.1	7.8	27.7	15.0	9.6	13.1	5.8	4.8	100.0
Third	33.2	−66.7	54.1	15.0	26.7	16.3	12.1	9.2	100.0
Fourth	13.0	37.5	9.7	7.5	7.8	13.9	4.6	6.0	100.0
Highest	37.1	30.9	4.5	2.6	5.0	6.5	8.3	5.0	100.0



Job Quality Quintiles	US-born white	US-born other	US-born black	US-born hispanic	Immigrant hispanic	Immigrant non-hispanic	Total
Lowest	4.2%	6.7%	12.8%	12.5%	46.9%	16.9%	100%
2nd	9.7%	9.4%	19.8%	14.7%	29.6%	16.7%	100%
3rd	-40.6%	19.5%	33.2%	28.2%	38.9%	20.7%	100%
4th	45.3%	8.9%	14.3%	9.3%	8.0%	14.1%	100%
Highest	55.3%	7.3%	8.3%	5.1%	2.6%	21.4%	100%

Figure 6 Immigration, race and job expansion, 1994–2000.

In the period 1994–2000, nearly 64% of the job expansion in the bottom quintile of the employment structure was filled by immigrants (of these, almost 75% were Hispanic), and 58% of the expansion below the median was filled by immigrants.[20] What is more, in the course of the 1990s, this concentration of immigrants in the expansion of jobs at the bottom increased: in the second half of the period, 1996–2000, 79% of the job expansion in the bottom quintile and 68% of the job expansion below the median was filled by immigrants. Although not as large as at the bottom of the employment structure, immigration also contributed

[20] Immigration data were available in the CPS only beginning in 1994. 'Immigrants' are here defined as 'foreign born'. There is no implication that these jobs were filled by people who immigrated in this period, but simply that they were foreign born.

significantly to employment expansion in the top two job quality quintiles, in which over 20% of the job expansion was filled by immigrants. Not surprisingly, non-Hispanic immigrants predominate here: almost 90% of the job expansion filled by immigrants in the top quintile in the 1990s consisted of non-Hispanic immigrants compared with under 30% of the bottom quintile.

3.5 A preliminary descriptive summing up

The descriptive results we have so far reviewed can be distilled into four basic observations.

First, the long 1990s economic boom produced a pattern of asymmetrically polarized job expansion: very strong expansion of jobs in the top tier of the employment structure, combined with very limited growth in the middle and moderately strong growth at the bottom. This is the only job expansion among those studied here in which this polarized pattern occurred.

Secondly, while the claim that the 1990s job expansion is significantly weighted towards 'good jobs' is correct, the overall pattern of job expansion is much less favorable for the labor force as a whole than the pattern in the previous longest episode of job expansion, the 1960s, and less favorable for people in the middle of the employment structure than the expansions of the 1970s and 1980s.

Thirdly, there has been a dramatic change in the racial and gender patterns of job expansion since the 1960s: gender differences in job expansion were very sharp in the 1960s and quite muted in the 1990s, while the racially polarized character of job expansion has increased, especially at the bottom of the employment structure.

Finally, immigration, especially of Hispanics, is deeply connected to the employment expansion in the bottom tiers of the employment structure. To a significant extent, the overall polarization of the employment expansion in the 1990s is linked to immigration.

4. Explaining the patterns of job expansion: 1990s vs. 1960s

There are three principle contrasts between the overall patterns of job expansion in the 1960s and the 1990s that we need to explain: first, the deep trough in job expansion in the middle quintile of the job quality distribution in the 1990s; secondly, the much higher contribution of the bottom quintile to job growth in the 1990s; and thirdly, the especially strong growth in the 1990s in the top quintile relative to the fourth. Each of these contrasts is closely linked to the fate of specific sectors of the economy.

4.1 The middle of the employment structure: the 1990s trough

To understand the slow growth of middle quintile jobs in the 1990s we must examine closely two sectoral contrasts with earlier periods: first, a striking difference

between the 1960s and the 1990s in the contribution of durable manufacturing to job expansion; and second, a difference between the 1980s and the 1990s in the contributions of service sectors to the growth of jobs in the middle of the employment structure.

Durable manufacturing Of the 23 economic sectors in terms of which we have analyzed the patterns of job expansion, there is one which is massively linked to the weak growth in the middle job quality quintile in the 1990s compared with the 1960s: durable manufacturing (see Figure 7). As indicated in Table 3, in 1963 18.7% of all full-time employee jobs in the US economy were in durable manufacturing, and nearly half (48%) of all middle quintile jobs were in that sector (no other sector contributed as much as 20% of the middle quintile jobs). Durable manufacturing was thus the pivotal sector within which jobs in the middle of the employment structure were located. In the course of the long 1960s employment expansion, jobs within durable manufacturing increased by nearly 4.7 million, accounting for 27% of the total job expansion in the period. Durable manufacturing, therefore, accounted for a higher proportion of job growth in the period (27%) than of jobs at

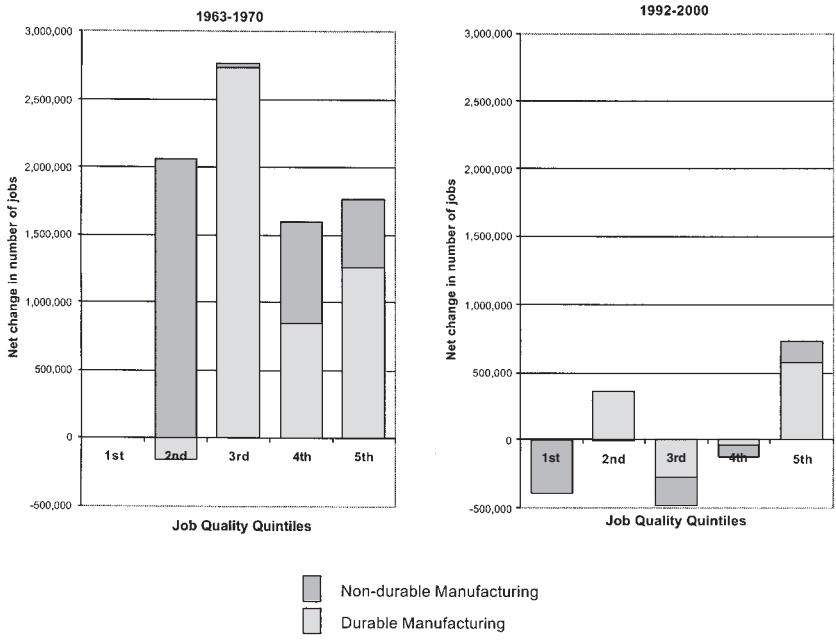


Figure 7 Net change in numbers of jobs in manufacturing by job quality deciles, 1960s and 1990s.

Table 3 Distribution of jobs and job expansion (%) by quintiles for durable manufacturing, 1960s and 1990s

Job quality quintiles	Percentage durable manufacturing jobs that are in each quintile	Percentage of jobs in each quintile that are in durable manufacturing	Percentage of total job expansion for each quintile that occurred in durable manufacturing
	1963	**1963**	**1963–70**
First	0.0	0.0	0.0
Second	4.7	4.3	−6.1
Third	54.9	48.3	65.5
Fourth	15.6	15.6	21.2
Fifth	24.8	23.7	26.2
Total	100.0	18.7	27.3
	1992	**1992**	**1992–2000**
First	1.9	1.2	−0.2
Second	32.9	20.7	13.0
Third	21.8	14.3	−29.9
Fourth	19.6	11.8	−1.3
Fifth	23.8	16.3	10.6
Total	100.0	12.8	4.1

the beginning of the period (18.7%). Of this expansion of employment in durable manufacturing, over 2.5 million jobs were in the middle quintile. This constituted 58% of the expansion of jobs in durable manufacturing and just under two-thirds of the total expansion of jobs in the middle quintile in the 1960s.

The contrast with the 1990s could not be starker. In 1992, at the beginning of the employment expansion, durable manufacturing was still the largest single sector of full-time employment in our 23-sector categories, but it had declined from 18.7% of all jobs to only 12.8%. What is even more striking, the concentration of durable manufacturing among middle quintile jobs declined from 48% to 14%. In the course of the 1990s boom, durable manufacturing jobs increased by only 600,000, or about 4% of total job growth, and within the middle quintile there was actually a loss of around 250,000 jobs. In the 1960s the strong expansion of durable manufacturing fueled strong job expansion in the middle of the employment structure. The absence of such growth in the 1990s is one of the crucial reasons for the trough in growth in the middle.

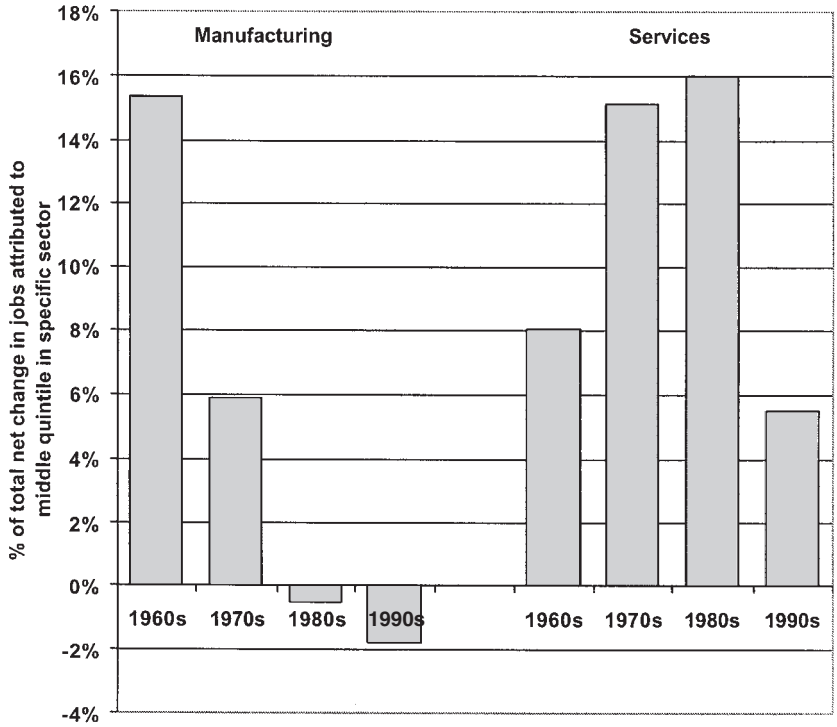


Figure 8 Contributions of middle job quality quintiles in manufacturing and in services to total net job growth, 1960s–1990s.

Services The decline of durable manufacturing is only part of the story. After all, as much research has argued, the decline of good jobs in manufacturing began in the 1970s and accelerated in the 1980s, and yet it is only in the 1990s expansion that aggregate slow growth of middle quintile jobs occurs. Figure 8 helps explain what happened in the 1980s that muted the effects of the decline in manufacturing.

This figure indicates the contributions of the middle job quality quintiles within two broad sectors—manufacturing (durable and nondurable) and services—to total job expansion in each of the periods we have examined. The results confirm the standard view of the decline of manufacturing in the 1970s and 1980s. By the 1980s expansion, the middle quintile of jobs in manufacturing contributed nothing to total job expansion. And yet there was no trough. The reason is that in the 1980s there was a sufficiently strong growth of middle quintile jobs in a number of service sectors to compensate for the absence of such growth in manufacturing. In the 1990s this countervailing trend had largely disappeared: whereas in the 1980s, 16% of the overall expansion of employment was generated by job growth in

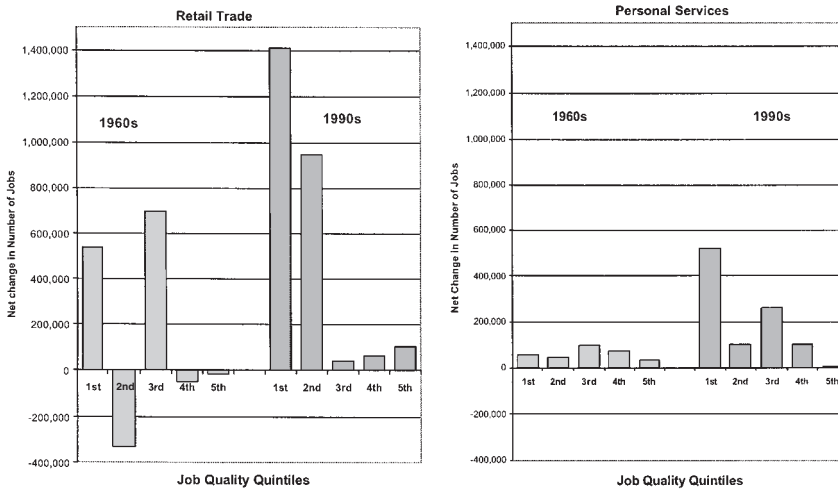


Figure 9 Patterns of job expansion in retail trade and personal service sectors, 1960s and 1990s.

the middle quintile within services, in the 1990s this had declined to under 6%.[21] The low overall growth of middle quintile jobs in the 1990s, therefore, is the result of decline in manufacturing, especially durable manufacturing, since the 1960s, combined with the sharp decline in the growth of middle quintile jobs in service sectors compared with the 1980s.

4.2 The bottom quintile of jobs: strong growth in the 1990s, weak growth in the 1960s

The strong growth of employment in the bottom quintile of the employment structure in the 1990s relative to the 1960s is especially concentrated in retail trade and the various sectors that comprise the aggregated personal service sector (see Figure 9 and Table 4). If anything, these results probably understate the growth of employment in the bottom quintile in the 1990s because of problems of undercounting low-wage minority and immigrant workers, especially in activities like personal services, which are often in the informal economy.[22] Retail trade and personal

[21] The contrast between the 1980s and 1990s is especially sharp for services involving high human capital: business services, FIRE (finance, insurance and real estate), public administration, miscellaneous professional services, medical services and educational services. The middle quintile of these sectors combined contributed just under 10% to total job expansion in the 1980s, but −1% in the 1990s.

[22] The Immigration and Naturalization Service (2001) estimated that 'About 5.0 million illegal undocumented immigrants were residing in the USA in October 1996 with a range of about 4.6 to 5.4 million … The population was estimated to be growing by about 275 000 each year.' Many—perhaps most—of these undocumented immigrants would be missing from both the census population estimates used to

Table 4 Distribution of jobs and job expansion (%) in retail trade and personal services, 1960s and 1990s

Retail trade				Personal services		
Job quality quintiles	**Percentage retail jobs that are in each quintile**	**Percentage of jobs in each quintile that are in retail**	**Percentage of total job expansion for each quintile that occurred in retail**	**Percentage personal services jobs that are in each quintile**	**Percentage of jobs in each quintile that are in personal services**	**Percentage of total job expansion for each quintile that occurred in personal services**
	1963	**1963**	**1963–70**	**1963**	**1963**	**1963–70**
First	54.4	44.3	31.9	78.2	31.3	15.4
Second	18.1	14.5	−13.1	4.8	1.9	1.1
Third	24.0	18.3	16.7	12.8	4.8	4.8
Fourth	1.1	1.0	−1.2	3.1	1.3	1.9
Fifth	2.3	1.9	−0.3	1.1	0.5	1.1
Total	100.0	16.3	4.9	100.0	8.1	3.6
	1992	**1992**	**1992–2000**	**1992**	**1992**	**1992–2000**
First	48.3	30.3	46.9	59.7	24.8	37.0
Second	38.7	24.0	34.3	22.7	9.4	6.8
Third	10.0	6.5	4.9	13.0	5.6	29.1
Fourth	1.4	0.8	2.2	4.0	1.6	3.9
Fifth	1.5	1.0	1.9	0.7	0.3	0.2
Total	100.0	12.6	17.0	100.0	8.4	11.1

[a]Personal services is an aggregated category that includes five of the 23 detailed sectors in our analysis: private household services; hotels, laundry, barber and beauty; misc. personal services; entertainment and recreation services; automotive and repair services; and eating and drinking places.

services together accounted for 18% of the full-time employed labor force in 1992, yet during the 1990s period of job growth these sectors accounted for just over 23% of the total expansion of jobs in the economy (just over 3.5 million additional jobs). Within this large sectoral expansion of employment in retail trade and personal services, a growth of 1.9 million jobs occurred in the bottom quintile of the job structure. This accounted for almost two-thirds of the growth of jobs in the bottom quintile and 13% of the expansion of jobs overall.[23] As in the case of manufacturing, the contrast with the 1960s is striking. The expansion of 1.16 million jobs in retail trade and personal services in the 1960s accounted for only 6.5% of total job growth (in contrast to the 23% of total job expansion in the 1990s), and furthermore, the job expansion in these two sectors was less concentrated in jobs in the bottom quintile than in the 1990s. In the 1960s, in fact, more of the growth of employment in retail trade occurred in the middle quintile (almost 700,000 jobs) than in the bottom quintile (about 540,000 jobs).

This very large expansion of low-end services in the 1990s clearly indicates that there was a demand on the part of employers for such jobs. But demand alone is not sufficient to explain actual job creation; there must also be a pool of people willing to fill such jobs. Here the pivotal issue is immigration. As already noted, immigrants account for nearly two-thirds of the job growth in the bottom quintile of employment in the period 1994–2000. In personal services, the figure was even higher, at 91%. These figures, if anything, probably understate the impact of immigration at the bottom of the employment structure since the CPS survey almost certainly significantly undercounts illegal immigrants. While we do not have corresponding CPS data for the 1960s, we know from general census data that there was very little immigration to the USA in the 1960s: the percentage of the population that was foreign born actually declined between 1960 and 1970 from 5.4% to 4.8% (US Census Bureau, 2001*a*, p. 44), while between 1990 and 2000 it increased from 7.9% to 10.4% (US Census Bureau, 2001*a*, p. 45). One cannot tell from the sheer presence of immigrants in low-end job expansion whether immigration as such is primarily a cause of the expansion of jobs at the bottom of the employment structure or primarily an effect of the supply of such jobs. Nevertheless, it seems unlikely that in the absence of substantial immigration there would have been an alternative domestic labor supply to fill the several million jobs in the bottom quintiles of the employment structure generated in the 1990s. The result would have been either that the

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generate sample weights and the CPS surveys themselves. For a discussion of undercounts of low-income populations in surveys using weights derived from the census, see Juhn and Potter (1999) and Anderson and Fienberg (1999).

[23] If we look at the bottom decile of jobs, then retail and personal services make up 86% of the job growth (1.5 million jobs) in the 1990s, i.e. most of the growth in these two sectors in the bottom quintile actually occurs in the bottom decile of the job structure.

wages of those jobs would have had to rise significantly to attract a labor supply from other sectors within the US labor force, or—more likely—those jobs simply would not have been created.

While immigration may have made the growth of jobs in the bottom quintile of the employment structure possible by providing a labor supply willing to work in such jobs, one other factor probably contributed significantly to the actual creation of these jobs: the very low minimum wage in the 1990s compared with the 1960s. Using 1999 dollars, the minimum wage rose from $6.26/hour in 1963 to a high of $7.07 in 1968 (Mishel, *et al.*, 2001, p. 187). In 1992 the minimum wage (in 1999 dollars) was $5.03, and it fluctuated slightly up and down from this level throughout the 1990s job expansion, ending at $5.00/hour in 2000. Given how much the overall productivity of the economy had grown since the 1960s, the 1990s minimum wage in the $5 range was even lower in effective economic terms relative to the 1960s. Even though there is much debate among economists about the impact of the minimum wage on the demand for labor, it seems very likely that if the minimum wage in the 1990s was as high as it was in the 1960s, then this growth of jobs in the bottom quintile would have been considerably less robust.[24]

4.3 The top of the employment structure

The exceptionally strong relative growth of employment in the top quintile in the 1990s is a story of the growth of business services (Figure 10 and Table 5) and, to an even greater extent, of the 'high tech domain' (Figure 11 and Table 6). As indicated in Table 5, in 1963 business services was a very small sector, accounting for only 1.3% of full-time jobs in the economy and 3% of the top quintile jobs. During the 1960s, there was a expansion of about 420,000 jobs in this sector (about 2.5% of the total expansion). Of these, 186,000 were in the top quintile, which accounted for about 4% of the overall job expansion in the top quintile. By 1992 the sector had nearly tripled as a percentage of the full-time employee labor force, but was still a relatively small sector (3.4% of full-time employment and 5% of the employment in jobs in the top quintile of the employment structure). In the 1990s job expansion, however, 16% of the expansion of employment occurred in this sector and 22% of the top quintile job expansion. That is, business services, which at the beginning of the period accounted for only 5% of the jobs in the top quintile, generated 22% of the job expansion in the top quintile.

[24] As indicated earlier, the contribution of the bottom quintile of jobs to total job expansion increased from 10% in the 1960s to 15% in the 1970s and 20% in the 1980s and 1990s. This trend is consistent with the trend in the erosion of the minimum wage: it was at a peak in the late 1960s, eroding slowly in the 1970s and more rapidly in the 1980s.

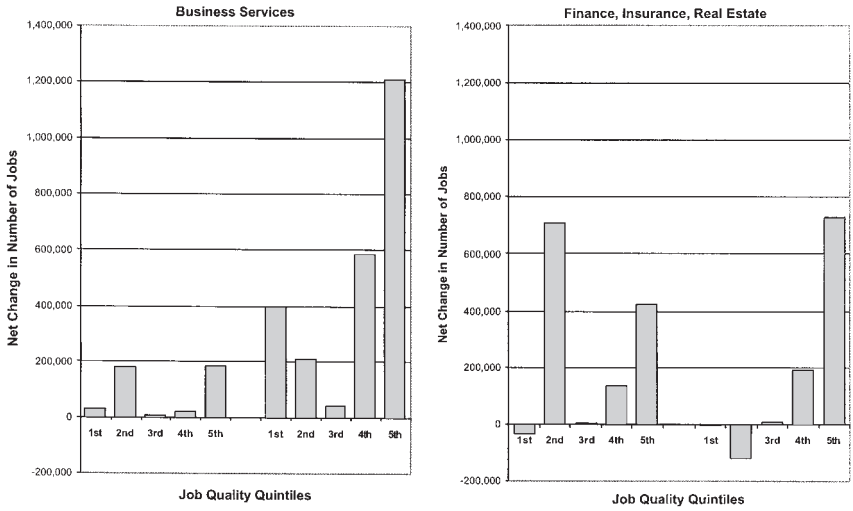

Figure 10 Patterns of job expansion in business services and FIRE, 1960s and 1990s.

One of the popular images of the growth of well-paid jobs in the 1990s is that they are closely connected to 'high tech'. The exact meaning of such claims is usually pretty vague: sometimes 'high tech' refers to sectors which produce high technology (e.g. the software or computer industry), sometimes to sectors which use a lot of high technology (e.g. medical care) and sometimes to occupations involving high tech regardless of the sector (e.g. computer scientists). For our analysis of this problem we have constructed a synthetic category consisting of all jobs within high tech sectors and all high tech jobs in all other sectors.[25] Unfortunately, it was impossible to construct even a rough version of this category for the 1960s since only two-digit occupation and industry classification schemes were available in the CPS in that period, so our analysis here will be restricted to the 1990s.

Table 6 and Figure 11 clearly indicate how important the expansion of this high tech domain was for the growth of jobs in the top quintile of the employment structure in the 1990s. In 1992, 17.3% of all full-time jobs were in the high tech domain. During the 1990s, this sector increased by 2.8 million jobs—or 18.6% of the total expansion. The expansion of jobs in this domain, however, accounted for over 50% of the expansion of jobs in the top job quality quintile for the economy as a whole. The growth of high tech thus fueled the expansion of the highest quintile of jobs in the 1990s almost as much as the growth of durable manufacturing dominated the expansion of middle quintile jobs in the 1960s.

[25] Details are presented in Wright and Dwyer (2003, appendix A2). Our classification of high tech sectors is based on work by Benner (1998), supplemented by personal communications with Benner.

Table 5 Distribution of jobs and job expansion (%) in business services and FIRE, 1960s and 1990s

Business services				FIRE		
Job quality quintiles	**Percentage retail jobs that are in each quintile**	**Percentage of jobs in each quintile that are in retail**	**Percentage of total job expansion for each quintile that occurred in retail**	**Percentage personal services jobs that are in each quintile**	**Percentage of jobs in each quintile that are in personal services**	**Percentage of total job expansion for each quintile that occurred in personal services**
	1963	**1963**	**1963–70**	**1963**	**1963**	**1963–70**
First	6.3	0.4	1.7	5.9	1.6	−2.0
Second	40.2	2.6	7.1	52.4	13.6	27.8
Third	1.6	0.1	0.2	3.4	0.8	0.1
Fourth	6.8	0.5	0.4	15.2	4.3	3.4
Fifth	45.1	3.0	3.9	23.1	6.2	8.8
Total	100.0	1.3	2.5	100.0	5.3	7.2
	1992	**1992**	**1992–2000**	**1992**	**1992**	**1992–2000**
First	31.7	5.3	13.2	11.2	4.0	−0.2
Second	16.7	2.8	7.6	22.6	8.0	−4.3
Third	8.2	1.4	4.6	19.1	7.0	0.7
Fourth	15.6	2.5	19.2	24.9	8.4	6.2
Fifth	27.7	5.0	22.2	22.2	8.6	13.3
Total	100.0	3.4	16.1	100.0	7.2	5.2

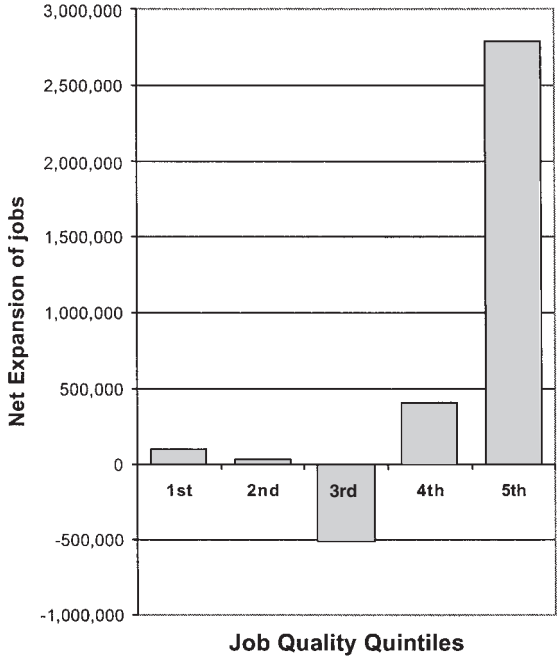

Figure 11 Job expansion in the high technology domain, 1992–2000.

Table 6 Distributions of jobs and job expansion (%) in the high technology domain, 1990s

Job quality quintiles	Percentage high tech jobs that are in each quintile	Percentage of jobs in each quintile that are in high tech domain	Percentage of total job expansion for each quintile that occurred in high tech domain
	1992	1992	1992–2000
First	1.6	1.4	3.4
Second	10.4	8.8	1.1
Third	17.5	15.5	−57.5
Fourth	23.1	18.7	13.3
Fifth	47.4	43.9	51.3
Total	100.0	17.3	18.6

5. Conclusions

The extraordinarily robust pattern of job creation in the US economy of the 1990s was heralded by many in the USA and abroad as a triumph of deregulated, 'free market' capitalism. The rigidities of the much more regulated European labor

markets were seen by many as central components of 'Eurosclerosis', leading to relatively weak job creation and stubbornly high rates of unemployment, especially among young workers. European governments were thus urged by leading economists to emulate the US model if they wanted to generate their own 'jobs miracle'.

The results of this study suggest a complex set of lessons from the US experience. If all one cares about is the sheer number of new jobs being generated in an economy, then it is certainly the case that masses of new jobs have indeed been created in the USA in the 1990s. It is also the case that a disproportionate amount of this job expansion occurred in the top tier of the employment structure, particularly in those sectors and activities dominated by high tech. This was not a job expansion dominated by McJobs in low-paid services.

The overall robust job creation and the expansion of well-paid high tech jobs of the 1990s, however, are only part of the story. When we compare the 1990s with the 1960s, a much less rosy picture emerges. In the 1960s, the sustained job expansion was unequivocally a process of upgrading the employment structure: slow growth at the bottom reflecting the relatively modest expansion of retail trade and personal services; strong growth in the middle anchored in durable manufacturing; and even stronger growth at the top. In the 1990s, the job expansion is characterized by an asymmetrical polarization of employment opportunities weighted toward the high end of the job structure. Of particular salience is the deep trough in employment expansion in the middle of the employment structure, a trough generated by the collapse of durable manufacturing as a source of employment growth, the absence of a countervailing expansion of middle quintile jobs in high-end services, and a much stronger growth at the bottom than in the 1960s, generated by the expansion of retail trade and personal services. Moreover, this polarized pattern of job expansion is highly racialized. Employment for whites—both men and women—has expanded sharply among the better jobs in the employment structure, whereas expanding employment for blacks, Hispanics and immigrants is much more concentrated at the bottom of the employment structure. The sustained period of economic growth in the 1990s may indeed be creating masses of new jobs, and in the aggregate many of these jobs may be among the better paying kinds of jobs in the US economy, but the net effect of this employment expansion has been to increase polarization in the employment structure in a particularly racialized form.

The patterns we have been studying are distributions of marginal changes in the employment structure, not directly the patterns of job distributions as such. The deep trough in middle quintile jobs is thus a trough in the growth of those jobs, not a description of the relative size of jobs in the middle compared with the tails of the employment structure. The long-term ramifications of these changes depend, then, upon the extent to which they are reinforced or counteracted in subsequent periods of job expansion and contraction.

Assuming that these trends do continue, there are a number of implications of the change in the pattern of employment expansion from the 1960s to the 1990s for the character of social inequality in the USA. First, the polarization of employment growth may suggest that poverty in the USA increasingly involves the working poor rather than simply people largely marginalized from the system of employment altogether.[26] The minimum wage of $5.15 in 2001 means that a person working 50 weeks a year at 40 hours a week would earn just over $10,000/year, or about 58% of the official poverty line for a family of four. In the late 1960s the minimum wage was sufficient to support a family at about 90% of the official poverty line. This is not to say that the link of poverty to unemployment and exclusion from the labor force has disappeared, but rather that an increasing proportion of poor people are working full time in those kinds of jobs that pay below-poverty-level wages. To seriously tackle poverty in the USA today requires more than just getting poor people into jobs; it requires changing the quality of jobs available to them or reducing the linkage between income and employment.[27]

Secondly, the very slow rate of growth of jobs in the middle range of job quality suggests that it may become increasingly difficult for people working in the worst jobs to move up in the employment structure. In the 1960s the very strong growth of middle quintile jobs in durable manufacturing meant that people from economic origins in the bottom tier of the employment structure or who were currently occupying such jobs had increasing employment opportunities in the middle of the employment structure in jobs that did not require high levels of education. The subsequent sharp decline in the 1990s in the growth rate of middle quintile jobs in general (the middle quintile grew at about a quarter the rate of all jobs in the 1990s), and of durable manufacturing jobs in particular (middle quintile jobs in durable manufacturing declined in the 1990s), means that this mobility channel has been sharply curtailed. A similar point could be made about retail trade: in the 1960s a significant proportion of job growth in retail trade occurred in the middle quintile of the employment structure; in the 1990s there was virtually no growth in middle quintile retail jobs. This suggests that people employed in the rapidly expanding

[26] It is possible, of course, depending upon patterns of cohabitation and family size, that people working in jobs in the bottom quintile of the employment structure may not actually have standards of living that fall below the poverty line. A two-earner household in which each working spouse worked full time at the minimum wage would have a household income just above the official poverty line. Nevertheless, the expansion of poorly paid employment is one of the factors that increases weight of the working poor in the American structure of inequality.

[27] The Earned Income Tax Credit is a move in the direction of partially delinking income and job earnings, thus softening the impact on people's lives of increasing polarization in the job structure. A more radical extension of this delinking would be a full-blown negative income tax or an unconditional basic income (Van Parijs *et al.*, 2001).

bottom quintiles of the employment structure will confront much more limited opportunities for significant improvements in employment in the future. This may pose a particular problem for immigrant communities, who already face disadvantages because of cultural and linguistic issues.[28]

Thirdly, there may be significant long-term political ramifications of the deep trough in the growth of middle quintile jobs when combined with such strong growth of jobs at the top. The question here is the social structural basis for what might be called a progressive–egalitarian political coalition in capitalist democracies. In the past, as a broad generalization, this coalition involved substantial numbers of people in jobs around the middle of the employment structure as well as in jobs at the bottom. This constituted a potential majoritarian coalition because of the strength of job growth in the middle. If the current pattern of economic development were a simple 'hour glass' pattern of job growth of symmetrical polarization or polarization weighted at the bottom, as some have implied (Massey and Hirst, 1998; Miller, 1999; Rayman-Read, 2001), then the prospects for a new majoritarian progressive–egalitarian coalition might seem promising, since a coalition with people in the middle of the employment structure might be less important. However, the combination of very rapid expansion of jobs in the top tier of employment with stagnation in the middle may mean that in the future it will be increasingly difficult to rebuild such a majority coalition even in the face of deteriorating conditions at the bottom of employment.

Fourthly, if the specific sectoral and occupational character of the patterns of employment growth were to continue into the future—high tech jobs being created at the top of the employment structure, personal services and retail trade jobs being created at the bottom—then this could signal the emergence of a new cultural reality of social inequality in which an increasing proportion of the people at the bottom are engaged in providing personal services to the people at the top. While it would be a gross exaggeration to describe this as a transformation of the working class into a servant class, nevertheless aspects of the master–servant relationship may become an increasing part of the cultural context of inequality.

Finally, the pattern of job expansion in the 1990s suggests significant transformations in the structure of racial stratification. Since the 1960s there has been a considerable expansion of employment of African Americans and other racial minorities in what are loosely described as middle class jobs. The proportion of doctors, lawyers, professors, managers and even executives who are African American has increased significantly. Among higher level jobs, therefore, there has been a partial deracialization. Among jobs at the bottom of the employment structure, on the

[28] For a discussion of the implications for mobility prospects of immigrants of a structure of economic opportunity increasingly being marked by a polarized structure of menial jobs at the bottom and high-wage jobs requiring a college degree at the top, with little in the middle, see Portes and Zhou (1993).

other hand, the 1990s has generated a process of deepening racialization. Only 12% of the expansion of jobs among non-Hispanic whites occurred in the bottom three quintiles of employment, compared with nearly 65.5% of job expansion among minorities.

This heightened racialized polarization at the bottom of the employment structure raises difficult moral and political issues. On the one hand, the expansion of jobs in the bottom quintile, even if badly paid, may constitute a real improvement in the lives of some people. This is especially the case for many immigrants, but also at least in some cases for people who otherwise might be marginalized from employment altogether. It is obviously too simple to unequivocally condemn the creation of such jobs if the real alternatives were materially much worse for the people who filled them. On the other hand, this racialized pattern of job growth, especially when combined with the slow rate of growth of accessible jobs in the middle of the employment structure, may contribute to new, deepened forms of racial division.

References

Anderson, M. J. and Fienberg, S. E. (1999) *Who Counts? The Politics of Census Taking in Contemporary America*, New York, Russell Sage Foundation.

Benner, C. (1998) 'Win the Lottery or Organize: Economic Restructuring and Union Organizing in Silicon Valley', *Berkeley Planning Journal*, **12**, 50–71.

Bureau of Labor Statistics (2002) *Occupational Outlook Handbook*, 2002–03 edn, Washington, DC, Bureau of Labor Statistics, US Department of Labor.

Council of Economic Advisors (with the US Department of Labor) (1996) 'Job Creation and Employment Opportunities: The United States Labor Market, 1993–1996', Washington, DC, Office of the Chief Economist.

Farber, H. (1997) 'Job Creation in the United States: Good Jobs or Bad?', Working Paper No. 385, Princeton, NJ, Industrial Relations Section, Princeton University.

Godbout, T. M. (1993) 'Employment Change and Sectoral Distribution in 10 Countries, 1970–90', *Monthly Labor Review*, **116**, 3–20.

Gottschalk, P. (1997) 'Inequality, Income Growth and Mobility: The Basic Facts', *Journal of Economic Perspectives*, **11**, 21–40.

Ilg, R. E. (1996) 'The Nature of Employment Growth, 1989–95', *Monthly Labor Review*, **119**, 29–36.

Ilg, R. E. and Haugen, S. E. (2000) 'Earnings and Employment Trends in the 1990s', *Monthly Labor Review*, **123**, 21–33.

Immigration and Naturalization Service (2001) *Estimates of the Undocumented Immigrant Population Residing in the United States*, Washington, DC, Immigration and Naturalization Service.

Juhn, C. and Potter, S. (1999) 'Explaining the Recent Divergence in Payroll and Household Employment Growth', *Current Issues in Economics and Finance*, **5**, 1–6.

Levenson, A. R. (1996) 'Recent Trends in Part-time Employment', *Contemporary Economic Policy*, **XIV**, 78–89.

Levy, F. (1998) *The New Dollars and Dreams: American Incomes and Economic Change*, New York, Russell Sage Foundation.

Massey, D. S. and Hirst, D. S. (1998) 'From Escalator to Hourglass: Changes in the U.S. Occupational Wage Structure 1949–1989', *Social Science Research*, **27**, 51–71.

Meisenheimer, J. R., II (1998) 'The services industry in the "good" versus "bad" job debate', *Monthly Labor Review*, 22–47.

Miller, D. W. (1999) 'Scholars on Immigration Focus on the Children', *Chronicle of Higher Education*, A19–A20.

Mishel, L., Bernstein, J. and Schmitt, J. (2001) *The State of Working America 2000/2001*, Ithaca, NY, Cornell University Press.

Morris, M. and Western, B. (1999) 'Inequality in Earnings at the Close of the Twentieth Century', *Annual Review of Sociology*, **25**, 623–57.

Plunkert, L. M. (1990) 'The 1980s: A Decade of Job Growth and Industry Shifts', *Monthly Labor Review*, **113**, 3–16.

Portes, A. and Zhou, M. (1993) 'The New Second Generation: Segmented Assimilation and its Variants', *Annals of the American Academy of Political and Social Science*, **530**, 74–96.

Rayman-Read, A. R. (2001) 'Is the New Economy Family-friendly?' *American Prospect*, **12** (1).

Reich, R. B. (1992) *The Work of Nations: Preparing Ourselves for 21st Century Capitalism*, New York, Vintage Books.

Rosenthal, N. H. (1995) 'The Nature of Occupational Employment Growth: 1983–93', *Monthly Labor Review*, **118**, 45–54.

Steinmetz, G. and Wright, E. O. (1989) 'The Fall and Rise of the Petty Bourgeoisie: Changing Patterns of Employment in the Postwar United States', *American Journal of Sociology*, **94**, 973–1018.

Van Parijs, P. *et al.* (2001) *What's Wrong with a Free Lunch?* Boston, MA, Beacon Press.

Wright, E. O. (1997) *Class Counts: Comparative Studies in Class Analysis*, Cambridge, Cambridge University Press.

Wright, E. O. and Dwyer, R. (2003) 'Methodological Appendices to "The Patterns of Job Expansions in the United States: a comparison of the 1960s and 1990s" ', posted at: *http://www.ssc.wisc.edu/~wright/SERapnx.pdf*

Wright, E. O. and Martin, B. (1987) 'The Transformation of the American Class Structure', *American Journal of Sociology*, **93**, 1–29.