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Hollowing out and the future of the labour market – the myth

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The labour market 'hollowing out' thesis suggests that there are far fewer intermediate-level jobs and far more low- and high-level jobs than two or three decades ago, primarily due to technological advancement. This column reviews recent research that finds little evidence in support of this conclusion. Though the composition of intermediate-level jobs has changed, their volume has probably not. Policy implications for specific groups of job seekers are discussed.

The 'hollowing out' thesis argues that intermediate-level jobs have been disappearing, and are replaced by a rise in low-level and in high-level jobs, and that this is primarily due to technology replacing routine jobs. That position, however, does not match what is seen in reality.

Two of the four points are generally agreed upon: the volume of high-level jobs has been increasing over time, and technology is reducing the volume of routine jobs (both low-pay and mid-pay). However, there appears to be little, if any, net reduction in mid-pay jobs, and it is not clear there has been an increase in low-pay ones. The mistake that is made is to assume that what you see looking forward, is what you get when you look at the current position, but the current position includes the effect of changes in relative wages and new jobs arising, while the historical view only takes into account changes in the number of existing jobs, holding relative pay constant.

The hollowing out thesis has had a great deal of attention in many countries including Britain and the United States, arising from the 2003 paper by Goos and Manning "Lousy and Lovely Jobs".

While it is not correct in its main implication (that the labour market has been hollowed out), the hollowing-out analysis is nevertheless right in highlighting some of the significant changes in the labour market that have occurred.

What has been happening in the labour market

Probably a better way to characterise the overall change in the labour market is to look separately at the skill level of jobs and at the pay of jobs, as they have changed in different ways, especially at the middle and lower levels.

- At the upper end of the distribution there has been an increase in jobs, whether measured by skill level, or pay.
- At the lower end, there has been a continuing reduction in the volume of the lowest skill jobs, with less of a reduction in low-pay jobs, as increasing numbers of mid-skill jobs attracting low-pay.

- At the mid-level, the volume of mid-skill jobs is fairly flat, depending on exactly where you draw the boundaries.

This is the outcome of conflicting trends. There have been substantial reductions in some occupation groups – primarily administrative and skilled trade jobs – due, to some extent, to the replacement of routine tasks, but also to global competition. Counterbalancing this, there have been large increases in volumes of mid-skill jobs, including technicians and associate professionals on one side, and care and other service jobs on the other.

In terms of pay, there is little, if any, evidence of much decline in mid-pay jobs, with some of the mid-pay jobs that disappear being replaced by an increasing volume of mid-pay jobs appearing in higher skill occupation groups, such as managers.

Historical perspective

From a historical perspective, we do see jobs that are initially low-pay and high-pay increasing in volume, and those that are initially mid-pay – decreasing. Steve McIntosh (2013) finds evidence from different countries over varying time periods, and using different methodological approaches, in supports of this argument. But that ignores subsequent changes in relative pay, and it ignores new jobs that arise, so the net result of the changes is not as much of a reduction in mid-pay jobs and increase in low-pay jobs as predicted.

Five challenges to the hollowing-out thesis

> First of all, the hollowing out analysis, even in its own terms, over-states the situation.

There have been a few narrow occupations that have largely disappeared from the UK, such as face-trained coal miners (down 93% from 76,301 over the 20 years from 1979), or boring and drilling machine setters (down 94% from 29,276), and which could be described as hollowed out. But as a group, skilled trades fell 25% over the period from 1990 to 2010 (Table I below, adapted from McIntosh 2013), and administrative jobs fell by 20%. While this is a significant reduction, it is not hollowing out in the sense that is usually understood (that such jobs have effectively disappeared) since substantial numbers of such jobs remain and require recruits - over a hundred thousand will be needed per year in each category (Table 4 in McIntosh 2013).

Table 1. Employment by occupation group 1990 to 2010, projected to 2020

Thousands	1990	2000	2010	2020
1. Managers	2,200	2,500	3,000	3,500
2. Professional occupations	4,100	4,800	5,800	6,700
3. Associate professional/technical	3,000	3,500	3,900	4,400
4. Administrative/secretarial	4,400	4,000	3,600	3,300
5. Skilled trades occupations	4,700	3,700	3,500	3,200
6. Caring, leisure and other service	1,400	2,100	2,700	3,000
7.Sales and customer service	2,300	2,400	2,600	2,600
8. Process, plant, machine operatives	2,800	2,300	1,900	1,700
9. Elementary occupations	3,500	3,400	3,100	3,200
Working population	26,400	26,600	27,400	28,400

Source: McIntosh (2013).

Second, we need to take into account the movement in relative wages.

Craig Holmes presented results at a policy seminar by the National Institute of Economic and Social Research (see Table 2 below), which show separately the 'composition effect', i.e. changing volumes of particular occupations, and the 'wage' effect, for example, increasing number of jobs in high-paid groups being mid-pay. Table 2 shows that the polarisation which occurs from composition changes (increasing proportions below and above the threshold, and hence a declining proportion in the middle) is moderated by the wage effect, and in the second cohort is removed altogether.

Table 2. From Holmes and Mayhew (2012)

Year	**Jobs earning below 2/3 * median hourly wage**	**Jobs earning above 1.5* median hourly wage**
Initial (1987)	20.2%	23.4%
Composition effects only	24.0%	27.1%
Final (2001)	23.0%	25.6%
Initial (1994)	22.6%	25.2%
Composition effects only	25.2%	27.3%
Final (2007)	21.3%	25.9%

Third, the usual measurement of the pay distribution can be seriously misleading.

For low-paid jobs, the usual distribution measure is the proportion below 2/3 of median pay, as in Table 2.

While this is probably a good measure of inequality, the following example shows how it can seriously mislead as a measure of the prevalence of low-paid jobs.

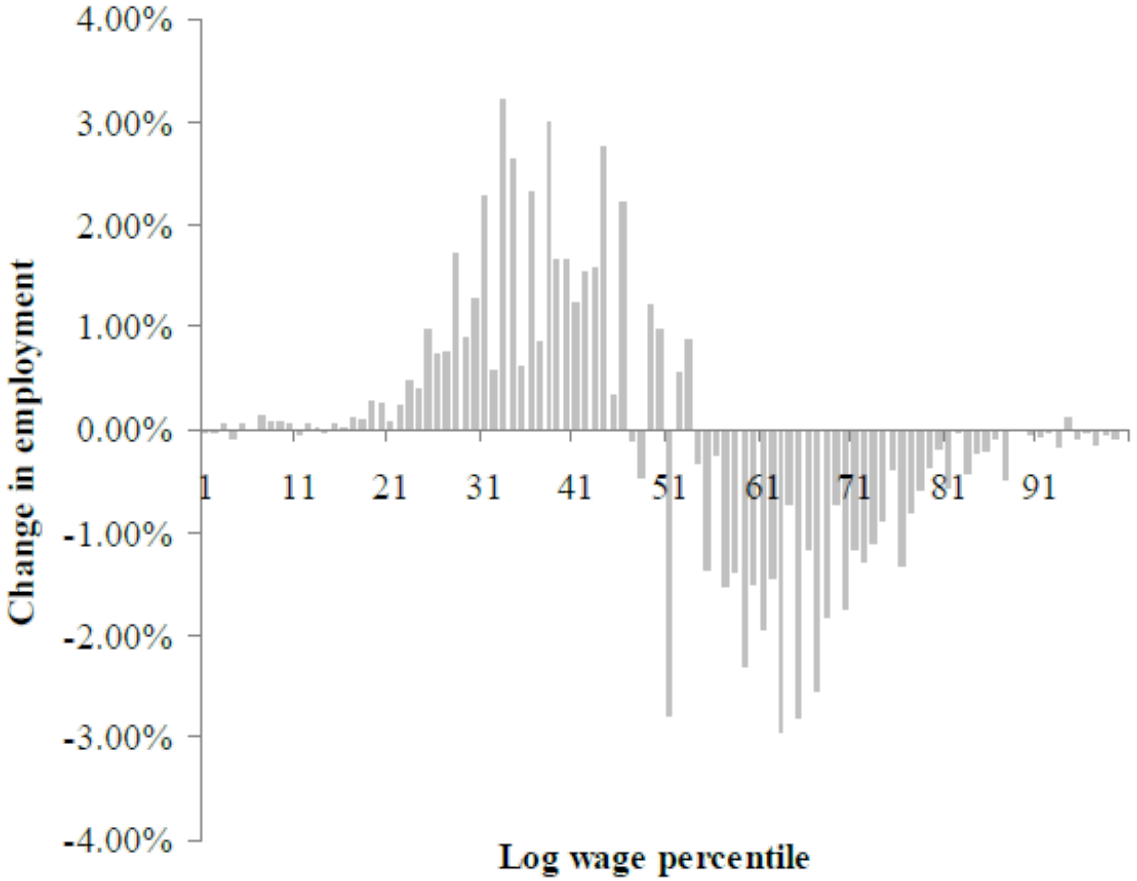
In the UK the proportion of jobs below two thirds of the median pay has increased from about 15% in 1980 to about 22% in 2005 (Lloyd, C. et al. 2003). But such a change could occur even if there was no increase in the number of low-pay jobs or the wage levels at all, but simply if there was an increase in the volume of jobs at the upper end of the pay range, as has been seen over recent decades (the annex gives numerical example). Indeed, an increase in the volume of jobs at the upper end could give the illusion of change in the direction of hollowing out, with an increase in the proportion of jobs at the bottom and the top, and a decline in the proportion of mid-pay, even if there had been no change at all in the volume or relative pay of the low-level and mid-level jobs. The problem is that anything which changes the median or the median wage will change the proportion below a median-related threshold, even if nothing has changed around or below that threshold.

Perhaps a better measure for monitoring change in the prevalence of low paid jobs would be the proportion below an inflation adjusted threshold.

Fourth, a different measure of distribution of jobs by pay is given by Holmes (reproduced in McIntosh 2013). Figure 1 shows the proportion of jobs by log wage percentile between 1981 and 2004.

> As can be seen, there is little change in the proportion at the top and bottom, with some movement around the mid-point.

Figure 1. Changes in employment by wage percentile 1981-2004, UK



Fifth, in terms of the skill rather than pay distribution, the skill level of the occupations that have reduced in volume (skilled trades and administrative), is similar to the two adjacent categories – caring and other service on the one hand, and technician and associate professionals on the other.

So, the volume of mid-skill jobs is likely to have remained fairly flat over the period, or even increased.

From all this, it is clear that although we do not see a hollowed-out labour market, there has been substantial change in the types of jobs at different levels that are available to those seeking work.

What does this mean for job seekers

There are three main groups of interest and related questions to answer.

- Are young people entering the labour market at a similar (or better) range of levels over time? How does this match their level of education and skills, do some groups seem to be doing worse than previously - not getting jobs or taking longer, taking lower level jobs?
- Do those with low school achievement progress as well, or better than previously, or have the changes in the labour market made their chances worse?
- Are opportunities for older adults seeking a job (due to being recently displaced, or re-entering the labour market) getting better or worse, given their level of education skills and experience?

McIntosh (2013) addresses these issues, but finds little evidence that answers them directly. He picks out some of the occupations that have seen big changes. Together with the ones that have virtually disappeared (noted above), there have been substantial increases in the volume of other intermediate skill jobs, such as care assistants (increase of 440,000 to 540,000), education assistants, and hospital assistants.

Thus, at an aggregate level the range of opportunities seems no worse, and could be better than previously. For the mid-pay group, the jobs that disappear when viewed from an historical perspective, are replaced by other mid-pay jobs. Replacements include, for example, those in high ranked occupations but at the lower end of the range, such as mid-pay managers, who have increased as a group in a number of sectors. Replacements also include some associate professionals and technicians, who too form a rapidly expanding group (Holmes and Mayhew 2012).

Implications for policy

As both McIntosh and Holmes argue, it would be wrong to conclude that there is no need to develop and maintain intermediate level education and skills, or to encourage individuals to reach such levels of attainment.

The evidence shows that intermediate-level jobs will remain, though they are changing in nature. It is, therefore, necessary for individuals to receive the education and training required to prepare them for the intermediate jobs that exist. They will also need skills, such as self-management and the ability to learn, that will enable them to be flexible, and respond to future changes in the labour market.

Progression

Although the volume of mid-pay jobs may not have changed much, the change in composition could cause some difficulties.

One problem that has been raised is the possible loss of progression routes into, and from, skilled trades. McIntosh says we do not have clear evidence as yet about the impact of these changes in progression, but it is not obviously worse than before. Further work on this would be helpful.

Policy priorities for further insight

This work highlights some gaps in our knowledge. In particular, what is happening to the proportion of low pay jobs over time? Has the situation got harder for people entering the labour market and for those wanting to progress, or do there continue to be jobs available as before - which could well be the case given the evidence here?

References

Holmes, Craig and Ken Mayhew (2012), "The changing shape of the UK job market and its implications for the bottom half of earners", Resolution Foundation, 1 March

Goos, Maarten and Alan Manning (2003), "Lousy and lovely jobs: The rising polarization of work in Britain", Centre for economic performance, London School of Economics

Lloyd, Caroline, Geoff Mason, and Ken Mayhew (2008), "Low wage work in the United Kingdom", the Russel Sage Foundation, New York

McIntosh, Steve (2013), "Hollowing out and the future of the labour market", UK government, Department of Business, Innovation, and Skills, BIS Research paper number 134

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Annex: An illustration of how a median-based measure can be misleading

To put numbers on how a median-based measure can be misleading over time, let us take a fairly even spread of jobs over the pay distribution with 20% below 2/3 of the median, and 20% above 1.5 times the median, and suppose that over the following 10 years we experience an increase of 20% further jobs at the upper end (which is the kind of change seen in the UK in recent years). Then, assuming no other changes, this increase in jobs at the upper end means that the proportion of jobs that were previously low paid drops from 20% to 17% (20 out of 100 to 20 out of 120), and the proportion of jobs above the previous upper threshold increases from 20% to 33% (20 out of 100 to 40 out of 120). But the median rises to a higher paid job, so the proportion below 2/3 the median (given an even spread of jobs over the pay distribution) rises to 25%, and the proportion above 1.5 times the median also rises to 25%, while the proportion of mid-pay jobs drops from 60% to 50%. Thus, there has been no change in the volume or pay of the jobs and people below 1.5 times the median, but the measure that is commonly used for assessing change in the labour market shows an increase in low paid jobs and in high paid jobs, and a drop in mid-pay jobs.

The assumptions used here are that we have a median of £10 per hour, with 2/3 being £6.67, and with 30 percentiles between them, which means an increase of 1.36% between each percentile. That increase is assumed for all percentiles. It is not needed, but we can assume there is a minimum wage cut-off at say £5, so all those that would fall at £5, or below, have a wage of £5.