

SKOPE

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Why is the Decline of Routine Jobs Across Europe so Uneven?

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Summary

Previous SKOPE research has looked at the consequences of changes in the occupational structure of the UK on outcomes such as wage inequality (Holmes and Mayhew 2012) and occupational or earnings mobility (Holmes and Mayhew 2014). This Issues Paper looks in the broadest terms at how occupational structures have changed across the UK's European neighbours, and what factors might be driving diverging experiences. For this, I consider the importance of educational attainment, unions, employment protection legislation, and minimum wages.

THE CONTEXT

Over the past two decades, the structure of occupations and jobs across many developed countries has changed significantly. There has been a growth in high-skill jobs such as managers, professionals, and technicians, and a decline in lesser-skill jobs such as process operatives or clerical and administrative workers. However, the change in the occupational structure is not entirely biased towards higher skills – low-skill jobs, particularly service occupations, have also grown.

There are several theories that explain this development, including information and communications technology (ICT) capital investments that substitute for routine task-based jobs (Autor, Levy, and Murnane 2003; Goos and Manning 2007); the ability to offshore certain jobs to places where labour costs are lower is another explana-

tion (Feenstra and Hanson 1996); and the increasing demand for low-skill services that occurs when relative incomes at the higher end rise – professionals working long hours may eat out more or employ someone to perform domestic chores they have little time for.

The existing empirical literature has tended to support the technology explanation. Goos, Manning, and Salomons (2009) use cross-country data on task content, offshorability and earnings inequality and find occupations grow when they score highly for non-routine tasks and shrink when they score highly for routine tasks. One possible issue with this analysis is that, as Blinder (2009) points out, it is routine jobs that are most easily offshorable as they typically require little customer interaction and performance can be easily monitored remotely as the series of tasks to be performed are well established. Hence, there is a lot of overlap between the technology and offshoring explanations. However, offshorability is more difficult to measure with any precision. Therefore, the task content measure might be picking up the true effect of this variable. That said, Michaels, Natraj, and van Reenen (2011) show that differences in the uptake of ICT capital explain industry variation in high-, middle- and low-skill employment across 11 OECD countries – although it is worth noting that these three groups are defined by the qualification level of individual workers, rather than their occupation (and, hence, says nothing about the tasks be-

ing performed in that industry).

Whatever the explanation, this type of analysis has so far been interested in understanding the general trend towards particular occupations and away from others. However, patterns around these general trends vary considerably. Grouping occupations as either high-skill (ISCO groups 1, 2, and 3), middle-skill (ISCO group 4, 6, 7, and 8), and low-skill (ISCO groups 5 and 9), Figure 1 below shows the difference in employment share of these groups between 1996 and 2008.

The performance of the UK during this time period is striking, with low-skill occupations increasing by a larger share than high-skill ones

Most countries experienced a relative growth in both high-skill and low-skill job groups, but not all countries fit this description (for example, Italy, Hungary, and Portugal). In those that do, the fall in the employment share of the middle-skill job group ranges from 5% in the Netherlands to 12% in Iceland. Moreover, the split between higher-skill and low-skill job growth is variable. In most countries, growth in higher-skill jobs dominates over growth in low-skill jobs – across all countries for which there is data, the ratio is approximately two high-skill jobs for each low-skill job. The performance of the UK during this time period is striking, with low-skill occupations increasing by a larger share than high-skill ones. Only the Netherlands (where growth of both

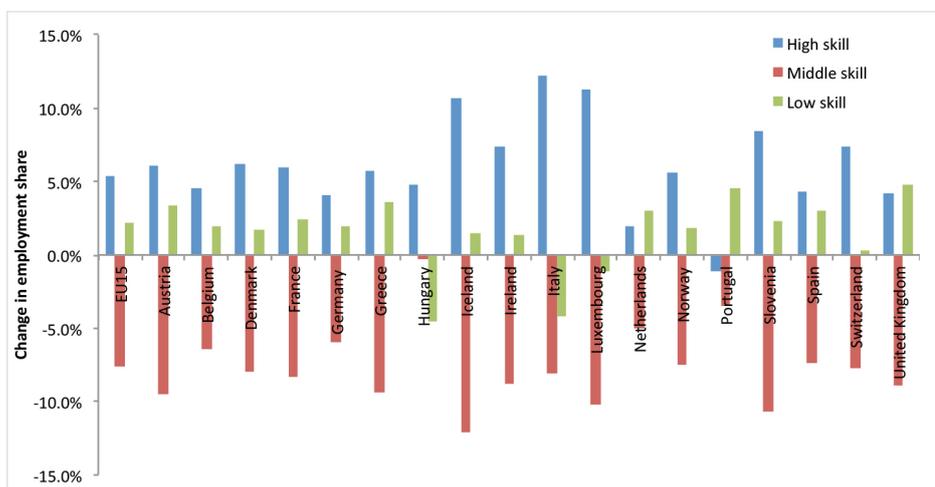
groups is smaller) and Portugal see this same pattern. By contrast, Ireland, which also saw a drop of 9% in middle-skill employment, saw six high-skill jobs created for each low-skill job created (the ratio in the UK was four high-skill to every five low-skill jobs).

Why does ‘hollowing out’ look different in countries across Europe? What could explain the UK’s experience? To start to explore this further, I examine correlations between the trends shown in Figure 1 and some simple country-specific measures. In particular, I consider whether differences in educational outcomes, union presence, and employment legislation relate to the change in routine and non-routine occupations.

Before doing so, it is useful to consider whether part of the explanation is down to a country’s starting position. If it were the case that all countries are converging on similar occupational structures in the long-run, the initial share of jobs will likely matter for subsequent changes in the level of these jobs – the further away from the long-run outcome, the faster we would expect occupational structuring to be taking place.

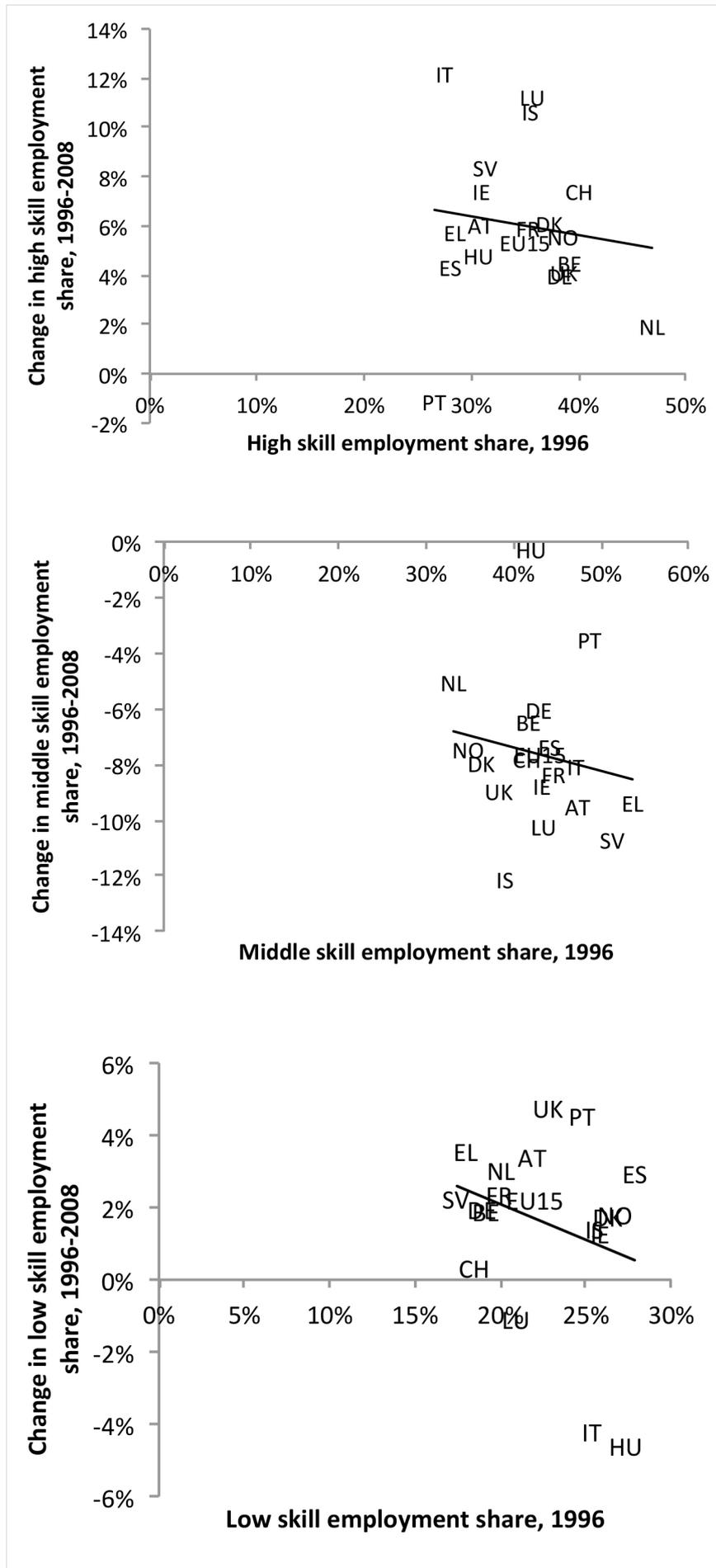
Figure 2 on page 3 shows the correlation between the initial level of high-skill, medium-skill and low-skill jobs in 1996, and their subsequent growth between 1996 and 2008. All three groups show a negative correlation, suggesting some convergence. However, these relationships are not particularly strong, with correlation coefficients of -0.127, -0.167 and -0.274 respectively.

Figure 1: Change in employment share of different occupational groups, 1996–2008



Source: Eurostat, EULFS

Figure 2: Trends towards convergence of occupational structures



Source: Eurostat, EULFS

THE IMPORTANCE OF AN EDUCATED WORKFORCE

Firstly, I consider whether skill supply is related to changes in the occupational structure (and the demand for skills this represents). I focus here on the supply of high skills produced through higher education. Figure 3 on page 4 shows the relationship between increased investment in higher education, as measured by the proportion of the workforce holding a qualification at ISCED levels 5 and 6 (undergraduate and post-graduate degrees and their equivalents) and the growth of high-skill jobs. There is a positive correlation between these two measures ($r = 0.281$), suggesting that increases in skill demand and supply go together. It is difficult to say anything causal about this relationship – increasing numbers of graduates may lead to the creation of more high-skilled jobs, but equally we could suppose that greater growth at the top of the occupational distribution creates incentives for individuals to participate in higher education. Moreover, governments may respond to changes in the occupational structure with policies to increase the size of their university sector. What is clear from Figure 3 is that, for most countries, the increase in graduate numbers exceeds the growth in employment in high-skill jobs, which is consistent with the literature on graduate employment trends (see Tholen 2013). The UK is one of the countries with the widest gap between the increase in supply and demand for high skills (9% compared to 4%).

One way we could say something about causality in this relationship is to look at whether having a greater supply of highly skilled workers subsequently encourages firms to shift towards higher-skill employment (Soskice [1993] suggested that the creation of a high-skilled labour force could encourage

labour markets to shift towards high-skill work). However, Figure 4 below shows no such correlation between the initial graduate share of the labour market in 1996 and the subsequent growth of high-skill occupations. There is no evidence here to support the hypothesis that supplies of high skills are a necessary condition for future increases in high-skill employment.

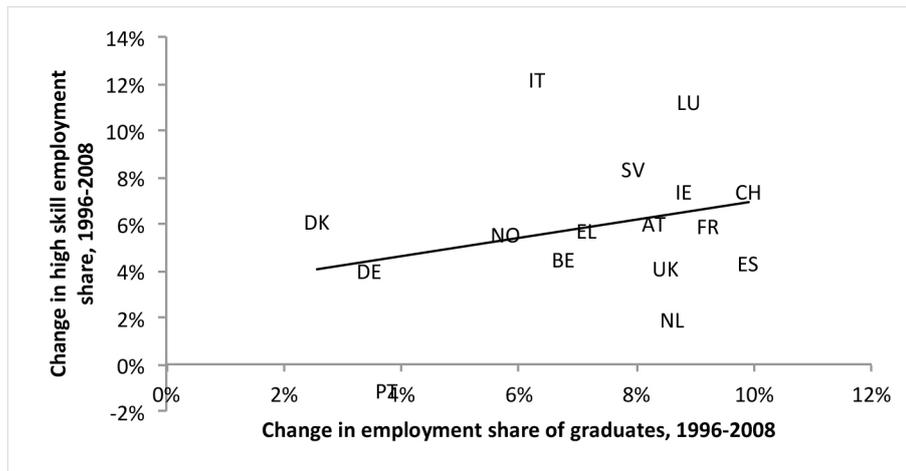
Unions: opponents of technological progress?

Secondly, I consider the impact of unions. Economic theory is ambiguous on the role of unions in this process. Viewed from a more traditional approach, the presence of strong unions increases the wage costs of workers, making employers keener to shift away from labour in the long-run. On the other hand, collective bargaining over employment levels and job content could reduce the diffusion of new labour-replacing technology and protect jobs. Then again,

rather than acting in opposition to employer interests, unions may have incentives act to raise productivity and improve workplace practices to create better jobs for members (Freeman and Medoff 1984), which is particularly relevant in countries where high-skill employment is unionised as much as traditional middle-skill manual work is. Figure 5 on page 5 shows the relationship between the change in middle-skill employment between 1996 and 2008 and union density measured in 1996. Figure 6 on page 5 shows the same for high-skill employment (similar relationships are found if union density is replaced with union coverage).

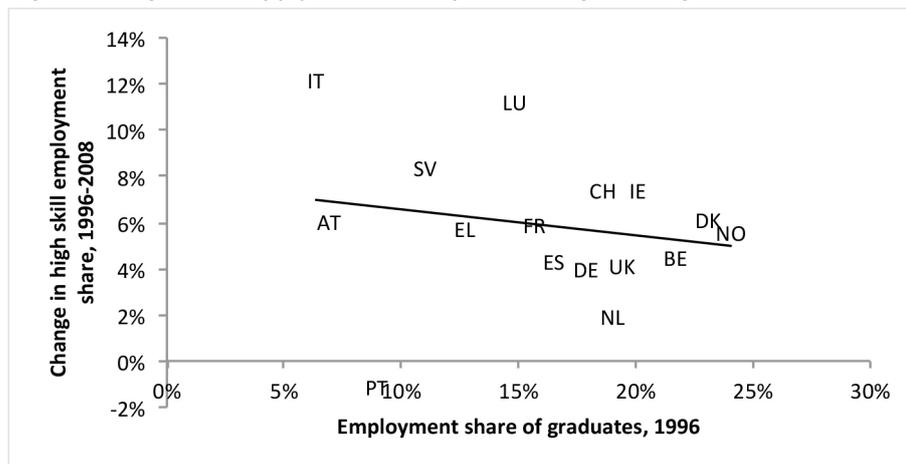
High union density is negatively correlated to the decline of routine jobs ($r = -0.316$), and positively related to the growth of higher-skill jobs ($r = 0.418$). This indicates that unions are not particularly able, or willing, to slow the decline of middle-level employment. If it is because of ability, then it could be because firms want to avoid higher

Figure 3: Changes in high-skill supply and demand



Source: Eurostat, EULFS

Figure 4: High-skill supply and subsequent changes to high-skill demand



Source: Eurostat, EULFS

wage costs by substituting towards capital. This data would also be consistent with the idea that unions facilitate job upgrading, particularly as many of the countries with the strongest union presence see the fastest rise in high-skill employment. This would mean they are not willing to resist a process that they could use to create better jobs for the workers they represent.

Law and order

Finally, I consider low wages and employment protection legislation. Figure 7 on page 6 shows the relationship between the strictness of employment protection (as meas-

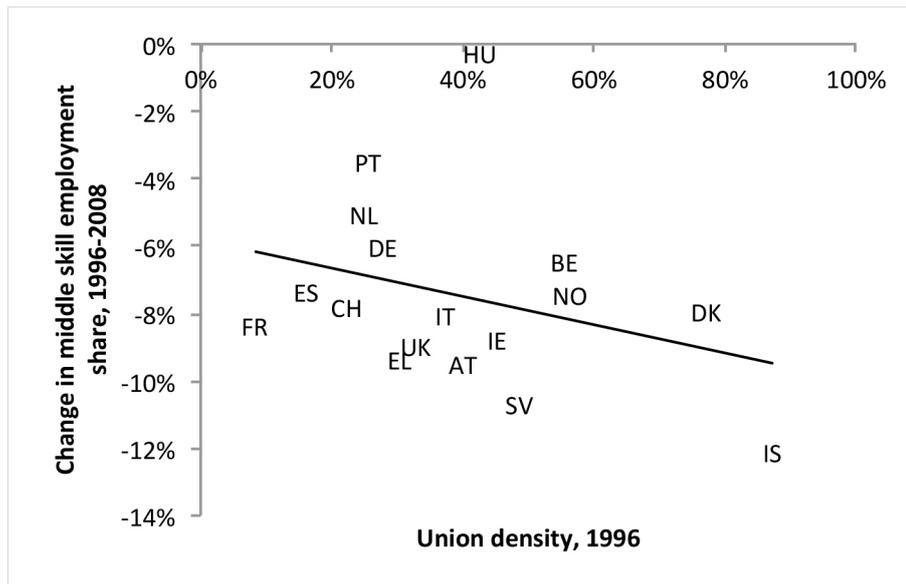
ured by the OECD on a five-point scale) and the decline of middle-skill employment.

Unions are not particularly able, or willing, to slow the decline of middle-level employment

The figure shows a predictably positive relationship ($r = 0.312$). This indicates that the more difficult it is to make workers redundant, the slower will be the shift away from middle-skill employment.

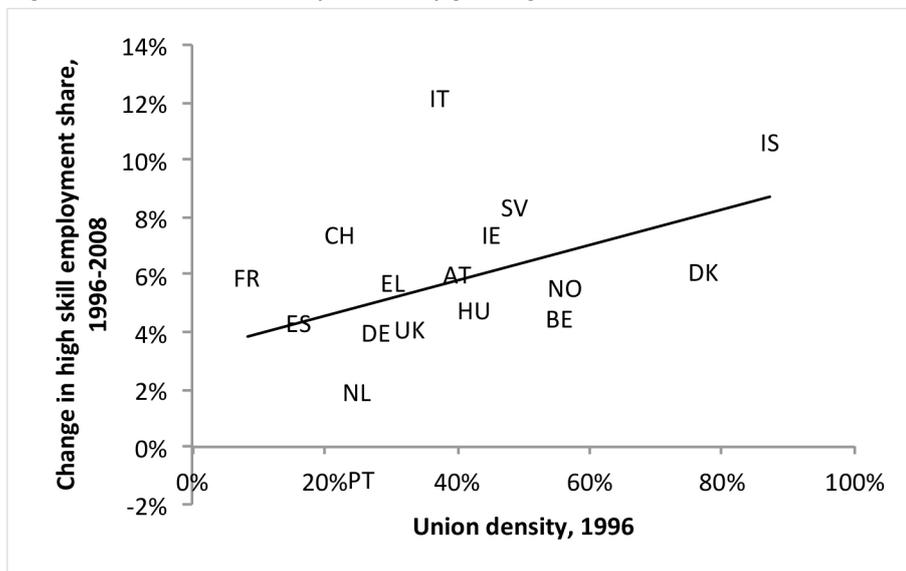
Finally, Figure 8 on page 6 shows the relationship between the generosity of national minimum-wage legislation (measured in 2002 to capture an average over the time

Figure 5: Unions and occupational hollowing out



Source: Eurostat, EULFS

Figure 6: Unions and occupational upgrading



Source: Eurostat, EULFS, OECD

period) and the growth of low-skill employment. This is a smaller sample of countries, as several of those in Figure 1 did not have legislated minimum wages during this period.

Again, there is the expected negative correlation ($r = -0.286$) – the higher the wage floor, the smaller the increase in the share of low-skill employment. This implies that the shift towards lower-skill service work could have been slowed in the UK with a higher national minimum wage.

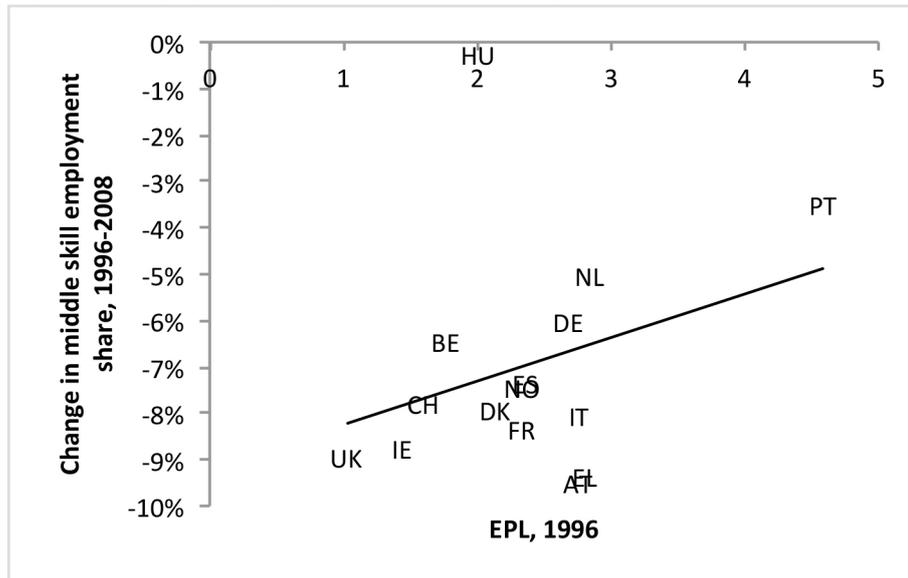
CONCLUSIONS AND FUTURE STEPS

Using a simple set of cross-country correlations, this paper has shown how various institutional characteristics relate

to the pattern of occupational structure change in different European countries. Some of these help to understand the UK's recent history – relatively weak employment protection legislation and low minimum wages typically coincide with a larger decline in middle-skill jobs and faster growth of low-skill employment respectively. However, that does not seem sufficient to explain why high-skill employment growth has been so limited.

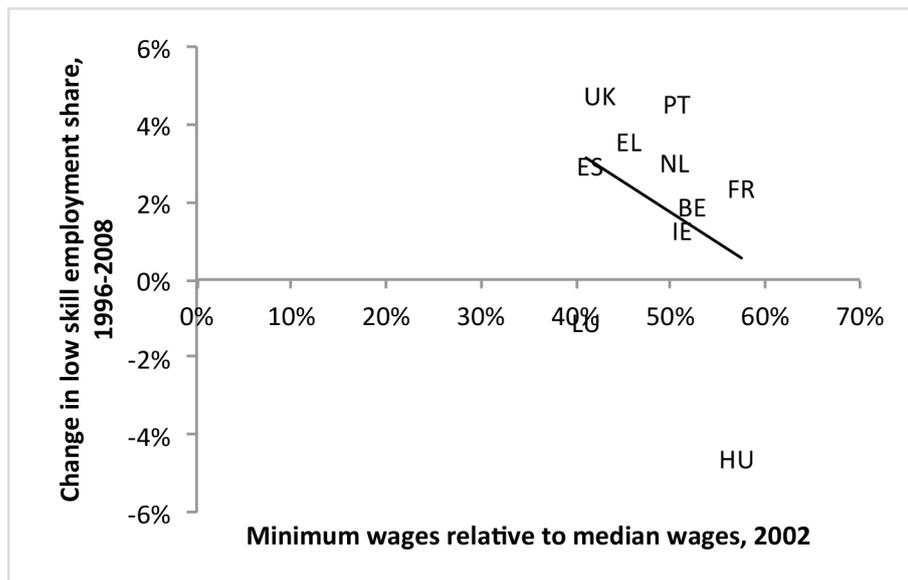
If most other countries are able to replace middle-skill jobs with jobs that require higher skills, then the relatively disappointing performance of the UK here suggests unrealised productivity gains for the economy. It could indicate some

Figure 7: Employment protection and hollowing out



Source: Eurostat, EULFS, OECD

Figure 8: Minimum wages and the growth of low-skill employment



Source: Eurostat, EULFS, OECD

form of occupational closure, where those in higher-level jobs prevent the expansion of their occupation to protect their high earnings from wage competition. This has obvious implications for earnings inequality. It might also reflect recent concerns that the range of jobs which might potentially disappear is not limited to the middle-skill jobs considered here (see, for example, Frey and Osborne 2013). If this has been happening more frequently in the UK, then the high-skill job group as currently defined will appear to grow smaller.

Much of this is speculation and is beyond the reach of this paper to address fully. The intention of this paper is to highlight the key trends and areas of divergence across countries, and to place the recent experience of the UK in a wider international context. Future research will go beyond the simple cross-country illustrations presented here and should evaluate the various theories introduced in this paper more closely.

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