Scotland's Economic Performance
Prof. Keith Bender and Dr Alexandros Zangelidis

Disclaimer
This document is a revised version of the evidence document submitted to the Economy, Jobs and Fair Work Committee at the Scottish Parliament on 14 November 2017. For purpose of comparability with reports produced by ONS, we revised our analysis and employed the ILO statistical approach to measure qualification mismatch, as used by ONS. According to this methodology, qualification mismatch is based on the mean level of the educational attainment for each occupation. The analysis presented in the original evidence document was based on the "mode", i.e. most common, qualification in each occupational group. The written evidence is based on our analysis using the UK Labour Force Survey, 2007-2016. Any errors are solely our responsibility.

Background
We welcome the Scottish Parliament Economy, Jobs and Fair Work Committee’s inquiry into Scotland’s Economic Performance. The Great Recession had caused significant disruption in the UK and Scottish labour market. We provide evidence on how the labour market in Scotland has changed over the past decade. This written evidence focuses on issues related to the educational composition of the workforce, the quality of the job match and the returns to education. The aim of this written evidence is not to be exhaustive in its coverage, but rather to highlight some challenges that the Scottish labour market may face.

Changes in the composition of the workforce
The Scottish labour market, like in all other UK regions, has experienced significant disruption since the onset of the Great Recession that resulted not only in increasing unemployment but also in a change in the educational composition of the people in employment. The rise in unemployment has led to a reallocation of the workforce that shifted the educational composition of workers (Fig. 1). This has disproportionately affected the lower educated people who were more likely to become jobless, while a higher share of the high-educated people managed to remain in employment.

- The share of workers with University degree or above has increased by nearly 50% (from 22% in 2007 to 33% in 2016).
- At the other end of the qualifications spectrum, the share of those with secondary-school education or below has declined.
Skills mismatch

Appropriately allocating correctly skilled workers to jobs is a key metric of an efficient labour market. One way of measuring how closely worker and job skills match is based on qualification mismatch that measures the discrepancy between the highest qualification held by a worker and the qualification required by his/her job, as measured by the average level of qualification in the respective occupation. Often this is operationalised by overqualification or underqualification (where the educational qualifications are greater or lower than those needed for the job, respectively).

Figure 2

At the same period of time, there has been a change in the occupational composition with a notable increase in Professional occupations and a smaller decline in the share of Managers and Administrators as shown in Table 1.

Indeed, a comparison between 2011 and 2016 suggests that the norms in what would be regarded as the required qualification for a job have changed. For almost one quarter of workers, the required qualification has increased (Table 2). Although this is evident across all occupations, this primarily driven by changes in the personal and protective services, followed by managers and administrators and plant and machine operatives (Table 3). However, for the 5-year period of time (2011-2016) it is difficult to argue that the nature of the job and its skills requirements have changed some much to justify this increase.
A more plausible explanation for the change in norms is the shift in the distribution of qualifications (Fig. 1). The recent turmoil in the labour market has disproportionately affected the workforce, with the people at the lower end of the skills spectrum being more vulnerable to fluctuations in the economy. This re-shuffle in the composition of the workers has shifted the distribution of skills. If we regard the norms observed in 2011\(^1\) as a reflection of the true qualification requirements, then we can see (Fig.3) that overqualification has indeed increased, with underqualification slightly declining for most part of the period.

A comparison between Fig.2 and Fig.3 suggests that there is a “hidden overqualification” that may not be accurately measured in the economy. Conversely, people whose would be considered having the required level of education, based on the 2011 norms, may now be classified as underqualified due to this “inflation” of qualifications in the labour market.

Who are more likely to be mismatched?
- Female workers are less likely to be overqualified or skills matched, compared to their male counterparts.
- People on temporary contracts are less likely to be qualification matched, compared to those on permanent contracts.
- There are no differences between people in full-time and part-time contracts.
- People in **professional occupations** are more likely to be skills matched, compared to **manager and administrators** (reference group). The opposite is true for people in **all other occupations**. People in the latter occupational groups, with the exception of **associate professional and technical occupations**, are more likely to be overqualified.

Why mismatch matters?
Previous literature suggests that skills mismatch affects wages, workers' turnover and is correlated with lower worker productivity.

Our analysis reveals that workers in Scotland who are mismatched experience a wage penalty of 2.1\%, compared to their counterparts who have the required level of qualifications. However, the effect of mismatch on wages is very different for those who are overqualified to those who are underqualified. While workers who have higher qualifications than those required receive a wage premium (4.8\%), underqualified people experience a wage penalty (10.6\%).

\(^1\) The occupational classification used in LFS has changed in 2011, so this is the earliest year we could use to make comparisons with year 2016.
For the period 2007-2016, the average probability of a worker in Scotland looking for a new job is 5.2%. Skills mismatch affects turnover, with workers who are mismatched in the current job having an average probability of 6.1% of looking for a new job, compared to 4.8% for those who are skills matched. Interestingly, despite the wage premium it is the overqualified people who are more likely to change jobs, where the average probability is 8.6%. In contrast, although underqualified workers enjoy lower wages, they appear to be less likely to look for a new job, compared to those who are skills matched or overqualified, with an average probability of looking for a new job at 2.9%. A plausible explanation may be that the alternative prospects in the labour market are not attractive enough for people to search for another job.

Does education still pay?
A measure of how competitive and attractive a local labour market may be is captured by how well skills and qualifications are rewarded. In order to shed some light on how the Scottish labour market has changed in the last decade, we compare two points in time, 2007, the year before the Great Recession, and 2016, the latest year where we have information from the Labour Force Survey. An additional year of education in 2007 is estimated to increase wages on average by 12.2%, *ceteris paribus*. This premium has almost halved in size in 2016. Similarly, comparing the returns to qualifications between 2007 and 2016 reveals that qualifications are not rewarded as well as they used to ten years ago. For example, individuals with higher (postgraduate) degree had on average 45.5% higher wages compared to people with no qualifications. This premium has reduced by 5 percentage points in 2016. Similar, reductions are observed in all other qualification groups (from GCE and above) as well.

### Educational Wage Premium in Scotland

<table>
<thead>
<tr>
<th>Education</th>
<th>2007</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years of education</td>
<td>12.2%</td>
<td>7.0%</td>
</tr>
<tr>
<td><strong>Educational qualifications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher degree</td>
<td>45.5%</td>
<td>40.3%</td>
</tr>
<tr>
<td>Degree of above</td>
<td>37.2%</td>
<td>29.8%</td>
</tr>
<tr>
<td>Certificate of educ.</td>
<td>22.0%</td>
<td>17.1%</td>
</tr>
<tr>
<td>GCE</td>
<td>17.2%</td>
<td>10.6%</td>
</tr>
<tr>
<td>GCSE</td>
<td>3.0%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Other qualifications</td>
<td>6.3%</td>
<td>-2.1%</td>
</tr>
<tr>
<td>No qualification (reference)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Statistically insignificant

Key points
- The distribution of skills in the Scottish labour market has changed in the last decade.
- In 2016, around 32% of workers were mismatched, with almost two thirds being overqualified and just over one third underqualified.
- Skills mismatch reduces wages for the underqualified and increases job turnover for both overqualified and underqualified.
- Qualifications are not rewarded as much as they used to ten years ago.
In light of these developments, the Scottish labour market may face challenges in recruiting, retaining and motivating the workforce.