International Comparisons of Qualifications: Skills Audit Update

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INTRODUCTION

The first Skills Audit research carried out for the Department of Education at the Centre for Economic Performance was published in 1997 (Green and Steedman 1997, Steedman, Green et al. 1997). The headline numbers produced were published in the 1996 government White Paper – Competitiveness: creating the enterprise centre of Europe (Office of the Deputy Prime Minister et al.1996).

The work carried out for that project was based upon extensive investigation of standards of the main qualifications/certification in the countries studied (UK, France, Germany, Singapore and the US). In order to establish robust international benchmarks information was gathered on course duration, course contact hours, assessment methods and subjects assessed. Wherever possible, examination papers were obtained and assessed against comparable UK courses by independent assessors (usually experienced teachers). Final judgments on standards were made on the basis of this data but were also informed in the case of France and Germany by researchers’ considerable prior experience of standards based on direct classroom observation. This work still forms the basis for the allocation of qualifications to the different categories used.

In 1999 the Skills Audit numbers were updated for the UK, France and Germany only (Steedman 2000). The headline numbers were again used to show the UK skill levels compared to other countries in Skills for All: Research Report from the National Skills Task Force published as part of the government’s review of skills in the UK in 2001.

In 2003 the Department for Education and Skills commissioned a third study to include all the countries in the first Skills Audit, UK, France, Germany, Singapore and the US. A new benchmark using the 1996 Labour Force Survey classification and ordering of highest qualifications and including women aged 16-64 (previously 16-59) was established for the UK. For the first time, Germany, as opposed to the former West German Länder was included in the study. A new benchmark was also produced for the US.

The aim of the study is to allow UK policy makers to observe, as accurately as possible, how stocks of qualifications in the UK population (aged 19-21, 25-28, active labour force 16-64 and total population 16-64) compare with other countries. Four levels of classification are used which correspond to the levels of the UK National Qualifications Framework (NQF). Based on work analysing relative standards described above, the categories of highest qualification in the Labour Force Surveys of each country are allocated so as to be as closely equivalent as possible to the levels of the NQF. The qualifications assigned to each of the NQF categories used in the analysis for each country are at Annex A. A detailed appendix for each country in the study provides information on data sources and qualifications structures. This third report in the series of international comparisons of skills now allows analysis of growth over time as well as comparisons of the different populations for the latest year available.
SECTION ONE

The UK in 2003 compared with the other countries in the audit (France, Germany, Singapore, US)

- The UK has higher proportions of 19-21 year olds at Level 2 and above than Germany or the US\(^1\). France is still 12 percentage points higher and Singapore is 11 percentage points higher (Table 1).

- At age 25-28 and Level 2 and above the UK is at a similar level to the US but lags France, Germany and Singapore (Table 1).

- The UK has the lowest proportion of the active population with a Level 2 or higher qualification of all the countries compared (Table 1).

- At Level 3 the proportion of 19-21 year olds in the UK is much the same as in Germany, Singapore and the US and just slightly above that of France (Table 2).

- The proportion of 25-28 year olds in the UK with Level 3 is similar to Singapore and the US but behind France and Germany (Table 2).

- The active population in the UK has higher proportions at Level 3 and above than France or Singapore but lags behind Germany and the US (Table 2).

\(^1\) Using a new baseline for the US see Annex A
Table 1 Qualifications at level 2 and above: UK 2003, France, Germany, Singapore 2002, USA 2003

<table>
<thead>
<tr>
<th></th>
<th>UK (NB)</th>
<th>France</th>
<th>Germany</th>
<th>Singapore (a)</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-21 year olds, total</td>
<td>72</td>
<td>84</td>
<td>68</td>
<td>83</td>
<td>66</td>
</tr>
<tr>
<td>25-28 year olds, total</td>
<td>73</td>
<td>86</td>
<td>85</td>
<td>82</td>
<td>73</td>
</tr>
<tr>
<td>Workforce, total (1)</td>
<td>64</td>
<td>77</td>
<td>85</td>
<td>67</td>
<td>73</td>
</tr>
<tr>
<td>Total population (16-64)</td>
<td>60</td>
<td>72</td>
<td>78</td>
<td>57</td>
<td>68</td>
</tr>
</tbody>
</table>

Notes
UK (NB) New Baseline CEP formula from 1996 ordering; includes women 60-64 but otherwise identical to UK (96)
(1) Aged 16-64 except France where active population includes all aged 15 and above
(a) Singapore aged 20-24 and 25-29; total population and active population all aged 15 and above

Figure 1 Qualifications at Level 2 and above: UK 2003, France, 2002, Germany 2002, Singapore 2002, USA 2003
Table 2 Qualifications at level 3 and above: UK 2003, France, Germany, Singapore 2002, USA 2003

<table>
<thead>
<tr>
<th></th>
<th>UK (NB)</th>
<th>France</th>
<th>Germany</th>
<th>Singapore (a)</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-21 year olds, total</td>
<td>48</td>
<td>45</td>
<td>47</td>
<td>50</td>
<td>49</td>
</tr>
<tr>
<td>25-28 year olds, total</td>
<td>54</td>
<td>62</td>
<td>74</td>
<td>57</td>
<td>58</td>
</tr>
<tr>
<td>Workforce, total (1)</td>
<td>44</td>
<td>41</td>
<td>68</td>
<td>39</td>
<td>57</td>
</tr>
<tr>
<td>Total population (16-64)</td>
<td>40</td>
<td>37</td>
<td>63</td>
<td>30</td>
<td>53</td>
</tr>
</tbody>
</table>

Notes
UK (NB) New Baseline CEP formula from 1996 ordering; includes women 60-64 but otherwise identical to UK (96)
(1) Aged 16-64 except France where active population includes all aged 15 and above
(a) Singapore aged 20-24 and 25-29; total population and active population all aged 15 and above
Commentary

At Level 2 and above 19-21 year olds in the UK have higher levels (72 per cent) than Germany (68 per cent) and the US (66 per cent). Singapore and France have much higher proportions at Level 2 and above (83 and 84 per cent respectively). Level 2 and above in the active population is much higher in Germany and also somewhat higher in the US and France relative to the UK (Figure 1). The higher German proportions in the active population result principally from long-term investment in apprenticeship over a prolonged period. In the US they result from historically high proportions completing High School and continuing to post-secondary qualifications; in France vocational qualifications account for nearly half of all qualifications in the active population at Level 2 and above.

At ages 19-21, the UK also compares well with all other countries at Level 3 and above. However, at age 25-28 at Level 3 and above the UK (54 per cent) lags France (62 per cent) and Germany (74 per cent) (Figure 2). The gap that opens up at this level at age 25-28 reflects the longer study periods in those countries before young people attain Level 3 or a higher level (already noted in earlier reports).
SECTION TWO

General and vocational qualifications at Level 2 and above and Level 3 and above

- At ages 19-21, around one quarter in the UK have gained vocational qualifications; vocational qualifications account for just under a third of all qualifications at Level 2 and above. (Table A.1). In France, (using definition 2) the corresponding figures are 43 and 50 per cent (Table A.2). 2 Of 19-21 year olds in Germany, one quarter have gained vocational qualifications at Level 2 and above and vocational qualifications account for around a third of all qualifications at Level 2 and above (Table A.3).

- In the US almost all High School graduates gain some credits towards graduation by taking one or more vocational courses. A small proportion of High School graduates (under 20 per cent) gain substantial proportions of credits through vocational courses taken in High School. However, these cannot be identified for the purposes of this study.

- In Singapore, students follow general education courses up to the age of 16; the main route to vocational specialisation starts post O-level and leads to the equivalent of a two year HE diploma. 3

- By age 25-28 the proportion with vocational qualifications at Level 2 and above has increased substantially in Germany to 48 per cent (Table A.3 and Figure 3). In France, proportions for 25-28 year olds are similar to those for 19-21 year olds (Table A.2 and Figure 3). The same is true of the UK where vocational qualifications again account for around one third of all qualifications at Level 2 and above for 25-28 year olds and 26 per cent hold vocational qualifications (Table A.1 UK and Figure 3).

- The proportion of the UK workforce having vocational qualifications at Level 2 and above (24 per cent) is similar to that of 25-28 year olds. In France, 42 per cent and in Germany 58 per cent of the workforce hold vocational qualifications at Level 2 and above.

- At Level 3 and above in the UK, proportions holding vocational qualifications are below 20 per cent for all population groups (Table B.1 and Figure 4). In France, using the updated definition 2, 28 per cent of 25-28 year olds have gained a vocational qualification at Level 3 and above (Table B.2 and Figure 4). In Germany the corresponding figure is 40 per cent (Table B.3 and Figure 4).

- In 2002/3 at both Level 2 and above and Level 3 and above in the UK and France (25-28 years old) proportions holding vocational qualifications have increased slightly since 1998. However, in both countries proportions holding qualifications at Level 2 and above

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2 Vocational at Level 2 and above defined as CAP/BEP, vocational and technological Baccalaureat and BTS. At Level 3 and above defined as vocational and technological Baccalaureat and BTS.

3 For further analysis see Appendix: Singapore
general education qualifications have increased faster than vocational (Tables A.1 and A.2; B.1 and B.2).

- In Germany at **Level 3 and above** proportions holding vocational qualifications have fallen for all populations since 1997 (Tables A.3 and B.3).

**Commentary**

In the two continental European countries, vocational qualifications continue to play an important role in enabling high proportions to reach Level 2 and above by age 25-28. In both France and Germany vocational qualifications account for around half of all qualifications gained at Level 2 and above. In the UK the proportion is lower – just under one third. Figure 3 shows that the UK has slightly higher proportions aged 25-28 at Level 2 and above with general qualifications but lower proportions with vocational qualifications.

In the UK and France, general qualifications have increased more rapidly since 1997/8 than vocational qualifications among those at Level 2 and above. In Germany proportions with vocational qualifications at Level 2 and above have fallen for the young population groups.

At Level 3 and above the UK has slightly higher proportions at ages 25-28 with general qualifications. France and Germany achieve higher proportions overall because a higher proportion at age 25-28 hold vocational qualifications (Figure 4).
Figure 3 Population aged 25-28 at Level 2 and above by type of qualification held, UK 2003, France, Germany (former BRD) 2002

Notes: For definitions of vocational and general qualifications see Annex A

Figure 4 Population aged 25-28 at Level 3 and above by type of qualification held, UK 2003, France, Germany (former BRD) 2002

Note: for definitions of vocational qualifications see Annex A
SECTION THREE

Qualifications at NQF equivalent levels 4 and 5

- In the UK proportions of 25-28 year olds with qualifications at Levels 4 and 5 are similar to the US, only slightly behind France but ten points below Singapore. Germany has less than half the UK proportion of 25-28 year olds at Levels 4 and 5 (Table 3).

- In France, Germany and Singapore substantial proportions of qualifications at >Level 3 are vocational/applied - higher education 2 year diplomas (France), four year applied degrees (Germany) or 3 year applied diplomas (Singapore). In the UK and US proportions with short vocational/applied diplomas/degrees are much smaller (Table 3).

Table 3: Tertiary education by type of qualification, France, Germany and Singapore 2002, UK and US 2003, all aged 25-28 and all aged 16-64

<table>
<thead>
<tr>
<th></th>
<th>France 25-28</th>
<th>16-64</th>
<th>Germany 25-28</th>
<th>16-64</th>
<th>Singapore 25-28 (d)</th>
<th>16-64 (e)</th>
<th>UK 25-28</th>
<th>16-64</th>
<th>USA 25-28</th>
<th>16-64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher degree</td>
<td>n/a</td>
<td>164</td>
<td>n/a</td>
<td>164</td>
<td>n/a</td>
<td>164</td>
<td>n/a</td>
<td>164</td>
<td>n/a</td>
<td>164</td>
</tr>
<tr>
<td>Bachelor degree (a)</td>
<td>21</td>
<td>11</td>
<td>6</td>
<td>7</td>
<td>29</td>
<td>13</td>
<td>22</td>
<td>12</td>
<td>14</td>
<td>27</td>
</tr>
<tr>
<td>Applied vocational degree (b)</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HE &lt; 3 years</td>
<td>19</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>17</td>
<td>7</td>
<td>8</td>
<td>8</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Other professional/ vocational (c)</td>
<td>n/a</td>
<td>n/a</td>
<td>6</td>
<td>7</td>
<td>n/a</td>
<td>n/a</td>
<td>1</td>
<td>0</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Total &gt; Level 3</td>
<td>40</td>
<td>22</td>
<td>17</td>
<td>19</td>
<td>46</td>
<td>20</td>
<td>36</td>
<td>25</td>
<td>38</td>
<td>34</td>
</tr>
</tbody>
</table>

Notes
(a) France, Germany, Singapore includes higher degrees
(b) Degree from German Fachhochschule
(c) Germany, Meister and other equivalent vocational qualifications; UK NVQ Level 4

Commentary

France and Singapore have achieved high levels of 25-28 year olds with qualifications at both Levels 4 and 5 by promoting shorter sub-degree level courses. In France, nearly half of all those with qualifications > Level 3 have a two-year sub-degree diploma, in Singapore just over one third have a sub-degree diploma (Table 3). In France there are two main routes to a two-year diploma; both have the Baccalauréat qualification as a pre-requisite giving the right to enrol on a post-secondary course of education. The first of these, the Diplôme universitaire de technologie (DUT) was introduced in 1965. The second, the Brevet de technicien supérieur (BTS) has been in place since the early 1950s. Both routes have benefited from the introduction of the technological and vocational Baccalauréat. Around one third of entrants to the DUT have a technological Baccalauréat while 8 out of 10 BTS students have obtained the technological or vocational Baccalauréat. The DUT is offered in institutes with university status but with stronger links to industry and business than is normal in the universities. The BTS is offered in classes held in selected technological lycées which makes it very widely available to students who continue to live at home. Numbers enrolled on DUT courses have increased threefold since 1975 and there is high demand for places. Numbers on
BTS courses are double those on DUT courses and there is less competition for places than for DUT courses.

Singapore has three main educational pathways after the end of lower secondary education. Young people graduating from the lower secondary schools with 6 or more higher grade O levels will normally proceed aged 15 to the Junior colleges or centralised institutes to take A levels, and from there progress to University. Those leaving with 5 or more higher grade O levels can proceed to the polytechnics to take 3 year vocational diploma courses which are equivalent to UK HNDs (Steedman, Green et.al. 1997). Some of these will have achieved good enough grades to enter university but choose to take the short degree option; others will have fallen just below the strict threshold for university entry. Those that do not attain the 5 higher grade O levels will normally go on to vocational courses at the Institutes of Technical Educational (ITE). These are mostly level 2 or level 3 taught vocational courses, originally styled on City and Guilds qualifications, but in some cases they take the form of an apprenticeship organised through the ITE. In 1998, 27.6 per cent of 16 year olds were in Junior colleges or centralized institutes; 41.7 per cent were in polytechnics and 27.1 per cent were in vocational programmes run by the ITE (Steedman, Green et.al. op.cit.). What is immediately apparent from these participation figures is that the polytechnic provides the main internal progression route to level 3 and higher qualifications in Singapore. Leaving aside those who gain degrees abroad, most of the increase in level 3 and higher qualifications since 1990 has come through expansion of these polytechnic courses. The other two pathways have contributed much less to the qualification growth.4

Recent growth at levels 4 and 5 can be inferred from differences between proportions of 25-28 year olds and proportions aged 16-64 having the same qualification level. On this measure, Singapore, France and the UK have experienced substantial recent growth at >Level 3. The US has historically high levels of qualification, principally at Level 5 and growth is less striking. Germany, however, has low proportions with qualifications at Levels 4 and 5 even when the relatively low level Meister and Techniker qualifications are included. Proportions with a full first-degree or higher degree are lower than for any other country. These proportions have not increased for the 25-28 age group. Even bearing in mind the late completion of German degrees, growth at this level in Germany looks totally out of line with trends in the other countries (Table 3).

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4 For further analysis see Appendix: Singapore
SECTION FOUR

Average annual growth rates of proportions of the population with qualifications at Levels 2 and 3 and above 1994-2003 (Tables 4 and 5) ⁵

- For qualifications at **Level 2 and above** the UK has the highest growth rate of all the countries reviewed for the period 1994-2003 in all four populations studied.

- In the UK 19-21 age group, almost all this growth occurred during the period 1994-1998 (4.81 compared to 0.84 1998-2003)

- UK growth at **Level 2 and above** is more evenly distributed for the 25-28 age group (3.58 1994-1998 and 3.37 1998-2003) and similarly for the other two populations

- For qualifications at **Level 3 and above** 1994-2003 the UK also has high growth in all populations, below that of Singapore but similar to that of France; the UK rate is considerably higher than growth in the US and Germany.


- Singapore had the highest rates of growth at **Level 3 and above** while Germany experienced less than one per cent at any level in any of the populations studied.

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⁵ Throughout this section Germany refers to the former Federal Republic only. Data for the UK uses the 1985 LFS ordering as the basis for classification of qualifications. For further details see Annex A.

<table>
<thead>
<tr>
<th></th>
<th>UK</th>
<th>France</th>
<th>Germany</th>
<th>Singapore</th>
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<tbody>
<tr>
<td>19-21 year olds</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1994-2003</td>
<td>2.59</td>
<td>0.93</td>
<td>0.00</td>
<td>1.27</td>
<td>-0.32</td>
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<tr>
<td>1994-1998</td>
<td>4.81</td>
<td>0.95</td>
<td>-0.30</td>
<td>n/a</td>
<td>-0.67</td>
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<td>1998-2003</td>
<td>0.84</td>
<td>0.91</td>
<td>0.38</td>
<td>n/a</td>
<td>-0.03</td>
</tr>
<tr>
<td>1994-1998</td>
<td>4.81</td>
<td>0.95</td>
<td>-0.30</td>
<td>n/a</td>
<td>-0.67</td>
</tr>
<tr>
<td>1998-2003</td>
<td>0.84</td>
<td>0.91</td>
<td>0.38</td>
<td>n/a</td>
<td>-0.03</td>
</tr>
<tr>
<td>25-28 year olds</td>
<td>3.46</td>
<td>1.07</td>
<td>0.54</td>
<td>2.56</td>
<td>0.31</td>
</tr>
<tr>
<td>1994-2003</td>
<td>4.81</td>
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<td>1.22</td>
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<td>1.28</td>
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<tr>
<td>1998-2003</td>
<td>3.37</td>
<td>0.89</td>
<td>-0.30</td>
<td>n/a</td>
<td>-0.46</td>
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<tr>
<td>1994-1998</td>
<td>3.58</td>
<td>1.24</td>
<td>1.22</td>
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<td>1.28</td>
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<td>1998-2003</td>
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<td>0.89</td>
<td>-0.30</td>
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<td>-0.46</td>
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<td>Workforce</td>
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<td>1994-2003</td>
<td>2.70</td>
<td>1.38</td>
<td>0.84</td>
<td>2.04</td>
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<td>1994-1998</td>
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<td>1.42</td>
<td>1.51</td>
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<tr>
<td>1998-2003</td>
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<td>1.34</td>
<td>0.00</td>
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<td>1994-1998</td>
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<td>1.51</td>
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<td>1998-2003</td>
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<td>1.34</td>
<td>0.00</td>
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<tr>
<td>Total population</td>
<td></td>
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<td>1994-2003</td>
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<td>1.37</td>
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<tr>
<td>1998-2003</td>
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<tr>
<td>19-21 year olds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1994-2003</td>
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<td>4.54</td>
<td>-1.21</td>
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<td>1998-2003</td>
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<td>1.14</td>
<td>-0.52</td>
<td>n/a</td>
<td>0.04</td>
</tr>
<tr>
<td>25-28 year olds</td>
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<td>1994-2003</td>
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<td>0.79</td>
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<td>2.55</td>
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<tr>
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<tr>
<td>1994-1998</td>
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<td>6.48</td>
<td>0.79</td>
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<td>2.55</td>
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<tr>
<td>1998-2003</td>
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<td>Workforce</td>
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<td>0.94</td>
<td>4.70</td>
<td>0.80</td>
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<td>1.00</td>
</tr>
<tr>
<td>1994-1998</td>
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<td>3.81</td>
<td>1.71</td>
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<td>0.56</td>
</tr>
<tr>
<td>1998-2003</td>
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<td>3.30</td>
<td>0.00</td>
<td>n/a</td>
<td>1.00</td>
</tr>
<tr>
<td>Total population</td>
<td></td>
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<td></td>
<td></td>
</tr>
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<td>0.87</td>
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<tr>
<td>1994-1998</td>
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<td>2.41</td>
<td>1.56</td>
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<td>0.76</td>
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<tr>
<td>1998-2003</td>
<td>3.4</td>
<td>2.90</td>
<td>0.00</td>
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</table>
Commentary

Using the series based on the 1985 LFS ordering for the UK we can observe annual average growth rates for two periods, 1994-1998 (1993-1997 for former German Federal Republic) and 1998-2003 (2002 for former German Federal Republic and France). Section 5 below examines the extent to which the UK rate of growth has narrowed the gap at Levels 2 and 3 with other countries.

The UK has the highest growth rate at Level 2 and above for all the populations studied and in both periods (1994-1998 and 1998-2003). The UK started from a lower base at both Levels 2 and 3 than any other country with respect to the two younger age groups (19-21 and 25-28) and rapid growth was therefore not unexpected, in particular at Level 2. However, very rapid growth of Level 2 and above for 19-21 year olds in 1994-1998 (5 per cent) has been followed by much lower rates of < one per cent in 1998-2003. As pointed out in Section 1 (above) the UK still lags Singapore and France at these ages and there is clearly scope for further growth. Growth for UK 25-28 year olds at Level 2 and above is still strong in the second period (1998-2003) but this may be a function of growth at earlier ages.

France registers almost all growth in this period at Level 3 and above rather than at Level 2 and above. For 19-21 year olds at Level 3 and above a growth pattern similar to that of the UK emerges – strong growth 1994-1998 and a slow down thereafter.

At Level 3 and above 1994-2003, UK growth for all populations studied compares well with the other four countries. Only Singapore has a significantly higher growth rate than the UK for the 25-28 age group.

Germany has very low growth rates at all levels and for all population groups. However, in 1993, Germany had levels of qualification for 25-28 year olds at Level 2 and above (80 per cent) that were around one third higher than those of other countries in the first Skills Audit study (Green and Steedman 1997).

During the nine year period 1993-2002 Germany has seen an increase of this level to 86 per cent, an annual average growth rate of 0.54 per cent. This very high initial level may explain the subsequent much slower growth as a natural ceiling is reached.

However, at Level 3 and above, growth for the 25-28 age group in Germany has been even lower than at Level 2, in stark contrast to all other countries. This can be largely explained by Germany’s failure to expand enrolment in the post-secondary sector contrary to trends in the other countries studied (Table GE.3).

---

6 The formula used to calculate average annual growth rates of qualifications is

\[ 100 \left( \frac{X(t)}{X(t-s)} \right)^{1/s} - 1 \]

where X is the proportion of the population at a given qualification level.
The US is the other country that has experienced low/negative growth rates over the period 1994-2003. For 19-21 year olds and 25-28 year olds at both Level 2 and above and 3 and above annual average growth in the US closely shadows Germany over the whole period.
SECTION FIVE

Narrowing the gap between the UK and France, Germany, Singapore and the US
(Using UK series based on 1985 LFS ordering – see Annex A)

- For 19-21 year olds at Level 2 and above in the UK the gap with France and
  Singapore has been roughly halved since 1994. Proportions of qualifications at
  Level 2 and above are now higher for this age-group in the UK than in the US or
  Germany (Figure 5).

- At Level 3 and above for the 19-21 age group Germany had an advantage of 14
  percentage points relative to the UK in 1994 and the gap with the US was of a
  similar magnitude. The gap with respect to Singapore was smaller. These gaps
  have now disappeared. (Figure 7)

- The gap between the UK and other countries at Level 2 and above has also
  narrowed considerably for the 25-28 year old age group. In 2002/3 the gap
  between the UK and France and Germany is less than half that of 1994 (Figure 6).

- For 25-28 year olds at Level 3 and above the UK has had less success than at
  Level 2 and above in narrowing the gap with other countries relative to 1994. The
  exception is the US where the UK was 18 points behind in 1994 but is now at a
  similar level. (Figure 8)

Commentary

This section considers only the two younger age groups when examining growth over
time. Change in levels of qualification of these young age groups can be understood as
the direct result of the implementation of public and private policies for education and
training. This is because at these ages most education and training is still publicly
provided or provided as a result of public-private partnership e.g. apprenticeship. The
EDEX project (described below) provided evidence that growth in qualification levels
of populations over the age of 30 was largely the result of more qualified young people
replacing older less qualified people in the population of working age.

The EDEX project brought together research teams from France, Germany, Italy, Spain
and the UK and examined educational expansion in selected cohorts who passed through
the education and training system from 1940 onwards.\(^7\) The methodology used involved
the comparison of samples from national Labour Force Surveys from the same age
groups analysed at different points in time. US data was also included in the study.
Differences in qualification levels of the same age groups over time revealed whether or
not adults were acquiring qualifications at a higher level in the course of their working
life. The study concluded that qualifications acquired in adult life were negligible and

\(^7\) Beduwe C and Planas J (2001) Education Expansion and the Labour Market Final Report to the European
Commission of a programme funded by the 4th Framework for Research and Development (TSER) for link
go to http://www.cordis.lu/guidance/tp4.htm
that most qualifications were acquired before the age of 30. This finding also held for the UK (Vignoles and Steedman 1999).

At Level 2 and above the UK is now rapidly catching up with other countries. Section 4 (above) showed higher growth rates for the UK at this level than for other countries compared. This suggests that growth in those countries may be slowing as a natural ceiling is reached which seems to lie somewhere around 85 per cent of a young age group. The UK still has some way to go to close this gap and it is therefore of concern that growth at this Level for 19-21 year olds slowed noticeably 1998-2003 compared to the earlier period.

For 25-28 year olds at Level 3 and above, not only the UK but also France and Singapore have experienced rapid growth with the result that the UK is just about ‘keeping pace’ with those countries rather than closing the gap.8 Both Germany and the US have lost some ground at this level relative to 1997/98 and the UK has made progress on closing the gap with these countries. In Germany the continuing trend away from vocational towards general education routes helps to explain this lack of growth as young people take longer in Germany than in other countries to complete general education courses (tertiary level courses) at Level 3 and above.

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8 For a more detailed analysis of growth in Singapore at Level 3 and above see Appendix: Singapore (below)
Figure 5
Narrowing the gap: 19-21 year olds at Level 2 and above

Notes: (a) UK 1985 ordering; (b) Germany former Federal Republic; c) Singapore aged 20-24, 1998 interpolated

Figure 6
Narrowing the gap: 25-28 year olds at Level 2 and above

Notes: (a) UK 1985 ordering; (b) Germany former Federal Republic; c) Singapore aged 25-29; 1998 interpolated
Figure 7
Narrowing the gap; 19-21 year olds at Level 3 and above

Notes: (a) UK 1985 ordering; (b) Germany - former Federal Republic; c) Singapore aged 20-24; 1998 interpolated
SECTION SIX

Qualification levels of women, 2002/3 at Level 2 and above (Table 6)

- In all countries for which we have data (UK, Germany, USA) women are slightly ahead of the average for the population at age 19-21. However, for UK and US these differences are not statistically significant.

- For the UK and the US (where there are no statistically significant differences) and for Germany, economically active women are at much the same level as the economically active population. Economically active women are better qualified than the total economically active population in France and Singapore.

- Compared to the total population (aged 16-64), women in the UK, France and Germany are slightly less qualified. In the US the difference is not statistically significant.
Table 6 Qualifications at level 2 and above, women: UK 2003, France, Germany, Singapore 2002, USA 2003

<table>
<thead>
<tr>
<th></th>
<th>UK (NB)</th>
<th>France</th>
<th>Germany</th>
<th>Singapore (a)</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-21 year olds, total</td>
<td>72</td>
<td>84</td>
<td>68</td>
<td>83</td>
<td>66</td>
</tr>
<tr>
<td>women</td>
<td>74</td>
<td>n/a</td>
<td>70</td>
<td>n/a</td>
<td>68</td>
</tr>
<tr>
<td>25-28 year olds, total</td>
<td>73</td>
<td>86</td>
<td>85</td>
<td>82</td>
<td>73</td>
</tr>
<tr>
<td>women</td>
<td>73</td>
<td>n/a</td>
<td>84</td>
<td>n/a</td>
<td>75</td>
</tr>
<tr>
<td>Workforce, total (1)</td>
<td>64</td>
<td>77</td>
<td>85</td>
<td>67</td>
<td>73</td>
</tr>
<tr>
<td>women</td>
<td>63</td>
<td>78</td>
<td>84</td>
<td>69</td>
<td>75</td>
</tr>
<tr>
<td>Total population (1)</td>
<td>60</td>
<td>63</td>
<td>78</td>
<td>57</td>
<td>68</td>
</tr>
<tr>
<td>women</td>
<td>57</td>
<td>60</td>
<td>76</td>
<td>n/a</td>
<td>69</td>
</tr>
</tbody>
</table>

Notes
UK (NB) New Baseline CEP formula from 1996 ordering; includes women 60-64 but otherwise identical to UK (96)
(1) Aged 16-64 except France where both total and active population includes all aged 15 and above
(a) Singapore aged 20-24 and 25-29; total population and active population all aged 15 and above

Qualification levels of women, 2002/3 at Level 3 and above (Table 7)

- At age 19-21 the difference for the UK and the US is not statistically significant; in Germany women are more qualified than the average for the whole group.
- At age 25-28 the difference for the UK is not statistically significant. Women in Germany are three points behind the average for the comparable total population while in the US they are slightly ahead
- The proportion of economically active women with Level 3 and above is slightly lower than for the economically active population as a whole, except for the US and France
- In France and Germany the proportion of all women aged 16-64 with Level 3 and above is lower than for the whole population aged 16-64. The difference in the US is not statistically significant. In the UK there is a slight but statistically significant difference – women aged 16-64 are slightly less qualified at Level 3 and above than the corresponding total population.
Table 7  Qualifications at level 3 and above, women: UK 2003, France, Germany, Singapore 2002, USA 2003

<table>
<thead>
<tr>
<th></th>
<th>UK (NB)</th>
<th>France</th>
<th>Germany</th>
<th>Singapore (a)</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-21 year olds, total</td>
<td>48</td>
<td>45</td>
<td>47</td>
<td>50</td>
<td>49</td>
</tr>
<tr>
<td>women</td>
<td>50</td>
<td>n/a</td>
<td>49</td>
<td>n/a</td>
<td>53</td>
</tr>
<tr>
<td>25-28 year olds, total</td>
<td>54</td>
<td>62</td>
<td>74</td>
<td>57</td>
<td>58</td>
</tr>
<tr>
<td>women</td>
<td>53</td>
<td>n/a</td>
<td>71</td>
<td>n/a</td>
<td>61</td>
</tr>
<tr>
<td>Workforce, total (1)</td>
<td>44</td>
<td>41</td>
<td>68</td>
<td>39</td>
<td>57</td>
</tr>
<tr>
<td>women</td>
<td>42</td>
<td>46</td>
<td>66</td>
<td>37</td>
<td>60</td>
</tr>
<tr>
<td>Total population (16-64)</td>
<td>40</td>
<td>37</td>
<td>63</td>
<td>30</td>
<td>53</td>
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<tr>
<td>women</td>
<td>38</td>
<td>33</td>
<td>60</td>
<td>n/a</td>
<td>54</td>
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</tbody>
</table>

Notes
UK (NB) New Baseline CEP formula from 1996 ordering; includes women 60-64 but otherwise identical to UK (96)
(1) Aged 16-64 except France where both total and active population includes all aged 15 and above
(a) Singapore aged 20-24 and 25-29; total population and active population all aged 15 and above
Qualifications levels of women, 2002/3 at above Level 3, 25-28 and 16-64 year olds compared (Table 8)

- In Germany, in all age groups, women have lower levels of qualification at post-secondary level
- In the UK and the US there is little difference for both population groups

Commentary

At both Level 2 and above and Level 3 and above women in the youngest age groups have higher levels of qualification than the total population in that age group. For the 25-28 age group there is little or no advantage. We cannot be sure whether this is result of an established trend for women to qualify earlier than men or the beginning of a trend to higher qualification levels for women. Overall the differences are very small. At post-secondary level there is little difference in proportions of women qualified compared to the population average in the UK and the US. However, in Germany women are behind in all population groups; women in the general population (16-64) have markedly lower (16 per cent) levels of post-secondary qualification.
<table>
<thead>
<tr>
<th></th>
<th>France 25-28</th>
<th>France 16-64</th>
<th>Germany 25-28</th>
<th>Germany 16-64</th>
<th>Singapore 25-28 c)</th>
<th>Singapore 16-64 (d)</th>
<th>UK 25-28</th>
<th>UK 16-64</th>
<th>USA 25-28</th>
<th>USA 16-64</th>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<td>5</td>
<td>8</td>
<td>8</td>
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<tr>
<td>Bachelor degree (a)</td>
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<td>11</td>
<td>12</td>
<td>29</td>
<td>13</td>
<td>22</td>
<td>12</td>
<td>24</td>
<td>17</td>
</tr>
<tr>
<td>HE &lt; 3 years</td>
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<td>8</td>
</tr>
<tr>
<td>Other professional/ vocational (b)</td>
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<td></td>
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<td>Total &gt; Level 3</td>
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<td>38</td>
<td>34</td>
</tr>
<tr>
<td>Women &gt; Level 3</td>
<td>n/a</td>
<td>n/a</td>
<td>15</td>
<td>16</td>
<td>n/a</td>
<td>n/a</td>
<td>36</td>
<td>24</td>
<td>39</td>
<td>34</td>
</tr>
</tbody>
</table>

(a) France, Germany, Singapore includes higher degrees  
(b) Germany, Meister and other equivalent vocational qualifications; UK NVQ Level 4  
(c) Singapore 25-29  
(d) Singapore 15 and over
SECTION SEVEN

Employed and total populations: employment ratios by qualification level

• Table 9 shows, for two points in time, the relationship between employed and total population (aged 16-64) expressed as the ratio of relative proportions of employed to total population in a given qualification category.

• This ratio shows the probability of employment - relative to the average for the country - for a group at a given qualification level while controlling for change in the size of the group over time.

• A ratio greater than one indicates a higher probability of employment. A ratio less than one indicates a lower probability of employment.

• In all countries, the proportion with Level 2 has declined over the last 5 years. Nevertheless, the probability for this group of being employed has not improved in the UK or France. In Germany the position has improved very slightly.

• The employment situation of the Level 2 group is more favourable in the UK than in France or Germany.

• In all countries the probability of employment for those at Levels 2 and 3 is close to one i.e. similar to the average for the whole economically active population.

• The employment situation of those at Levels 2 and 3 has hardly changed between 1998 and 2003 despite growth in the proportions in these groups over the five year period.

• Those at Level 3 have a considerably higher than average employment probability in all three countries. France has the highest employment probability for this level and the UK has the lowest.
Table 9  Ratio employed/total population by NQF equivalent qualification level, UK, France and Germany (1) 1998(97) and 2002(03)  

<table>
<thead>
<tr>
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<th>Level 3</th>
<th>&gt;Level 3</th>
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<td>0.89</td>
<td>1.03</td>
<td>1.04</td>
<td>1.18</td>
</tr>
<tr>
<td>FR1998</td>
<td>0.63</td>
<td>1.20</td>
<td>1.14</td>
<td>1.47</td>
</tr>
<tr>
<td>GE1997</td>
<td>0.64</td>
<td>1.05</td>
<td>1.07</td>
<td>1.28</td>
</tr>
<tr>
<td>UK2003</td>
<td>0.88</td>
<td>1.01</td>
<td>1.04</td>
<td>1.16</td>
</tr>
<tr>
<td>FR2002</td>
<td>0.59</td>
<td>1.16</td>
<td>1.14</td>
<td>1.47</td>
</tr>
<tr>
<td>GE2002</td>
<td>0.66</td>
<td>1.05</td>
<td>1.06</td>
<td>1.26</td>
</tr>
</tbody>
</table>

(1) Former West Germany

Commentary

The skill composition of the employed population is normally a function of the skill composition of the total population and is, in addition, determined by the composition of economic activity, labour market regulation and other social and cultural factors.

Differences between countries and over time in the relationship between employed and total population at different qualification levels can be expressed as the ratio of the proportion of the employed population in a given qualification category to the proportion of the total population in the same qualification category. This controls for changes over time in proportions at the different qualification levels and for differences between countries in proportions of the total population employed.

Where those at a given level have a higher than average likelihood of being employed, the ratio will be greater than one. Where the ratio is less than one there will be a less than average likelihood of employment. This allows us to examine how the demand for those at different levels varies by country and over time.

For the countries studied (UK, France and Germany) those at < Level 2 have a less than average likelihood of employment although their prospects are better in the UK than in France or Germany despite the fact that the UK has the highest proportion at < Level 2. For Levels 2 and 3 there appears to be a probability of employment close to the average for the whole population. At > Level 3 (higher education) the likelihood of employment is greater than even and higher than for all other qualification groups. This continues to be the case in the UK and France despite strong expansion of > Level 3. In Germany, where > Level 3 has expanded the least, demand is less strong than in France. This may be taken as support for the view that some apprenticeships substitute for graduate skills.
MAIN CONCLUSIONS – UK COMPARED TO FRANCE, GERMANY, SINGAPORE AND THE US

• At Level 2 and above proportions of UK 19-21 year olds are higher than in Germany and the US. However, Singapore and France have much higher proportions at Level 2 and above

• At ages 19-21, the UK also compares well with all other countries at Level 3 and above. However, at age 25-28 at Level 3 and above the UK lags behind France and Germany

• In the two continental European countries, vocational qualifications continue to play an important role in enabling more young people to reach Level 2 and Level 3 and above by age 25-28.

• In the UK proportions of 25-28 year olds with higher education (HE) qualifications are similar to the US, only slightly behind France but ten points below Singapore. Germany has less than half the UK proportion of 25-28 year olds with HE qualifications.

• In France, Germany and Singapore substantial proportions of HE qualifications are vocational/applied. In the UK and US proportions with short vocational/applied diplomas/degrees are much smaller

• The UK has the highest growth rate of qualifications at Level 2 and above over the period 1994-2003

• At Level 3 and above 1994-2003, UK growth compares well with the other four countries. Only Singapore has a significantly higher growth rate than the UK for the 25-28 age group.

• For 19-21 year olds at Level 2 and above in the UK, the gap with France and Singapore has been roughly halved since 1994.

• At Level 3 and above for the 19-21 age group Germany had an advantage of 14 percentage points relative to the UK in 1994 and the gap with the US was of a similar magnitude. The gap with respect to Singapore was slightly smaller. These gaps have now disappeared

• For 25-28 year olds at Level 3 and above, not only the UK but also France and Singapore have experienced rapid growth with the result that the UK is just about ‘keeping pace’ with those countries but has made progress on closing the gap with Germany and the USA
• Qualification levels in the UK increase much more slowly after ages 19-21 than in France and Germany. In these countries qualifications at Level 3 and above increase substantially between ages 19-21 and 25-28.

References


Vignoles A and H Steedman (1999) ‘Schooling and the Supply of Qualifications in the UK 1930-1997’ Paper prepared as part of the EDEX project funded by DGXII of the European Commission under the 4th Framework Programme of Targeted Socio-Economic Research Centre for Economic Performance, mimeo

### SENSITIVITY ANALYSIS

Revised 22/04/04

Table A.1 UK: qualifications at level 2 and above, sensitivity analysis

<table>
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<tbody>
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<tr>
<td>25-28 year olds, vocational</td>
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</tr>
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<td>24</td>
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**Notes**
- UK (85) CEP formula from 1985 LFS ordering (for full information see Annex A)
- UK (96) CEP formula from 1996 LFS ordering (for full information see Annex A)
- UK (NB) New Baseline CEP formula from 1996 ordering; includes women 60-64 but otherwise identical to UK (96)
- UK (NT) Calculations on the basis of allocation of qualifications to National Education and Training Targets by DFEE 1999 (for full information see Annex A)
  - (a) 44% of O-levels/GCSE allocated to Level 2 (corresponds to current proportion obtaining 5 GCSE A*-C grades)
  - (b) Non-certificated apprenticeship included at Level 2
Table A.2 France: qualifications at level 2 and above: sensitivity analysis

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<th>2002</th>
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<td>19-21 year olds, vocational (1)</td>
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<tr>
<td>19-21 year olds, vocational (2)</td>
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<td>19-21 year olds, total</td>
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<td>25-28 year olds, general education (2)</td>
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<tr>
<td>25-28 year olds, vocational (1)</td>
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<td>39</td>
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<td>25-28 year olds, vocational (2)</td>
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<tr>
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<td>Workforce (15 and over), total</td>
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<td>Population 16-64, general education (1)</td>
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<td>Population 16-64, vocational (1)</td>
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Notes
For full information see Annex A and Appendix: France
(1) General education defined as Brevet, Baccalaureat and Degree qualifications; vocational education defined as CAP/BEP and BTS (2 year vocational HE)
(2) General education defined as Brevet, general Baccalaureat and Degree qualifications vocational education defined as CAP/BEP, vocational and technological Baccalaureat and BTS (2 year vocational HE). Younger populations only as some of these qualifications relatively recent.
(a) Brevet allocated to < Level 2
### Table A.3 Germany: qualifications at level 2 and above: sensitivity analysis

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<td>19-21 year olds, vocational</td>
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<td>Population 16-64, vocational</td>
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**Notes**
Former BRD = Former Federal German Republic; for full information see Annex A and Appendix: Germany
General education = Realschulabschluss, Abitur, Fachhochschulreife, Fachhochschulabschluss, all degrees
Vocational education = Apprenticeship, Meister and Techniker
Revised 22/04/04

Table B.1 UK: qualifications at level 3 and above: sensitivity analysis

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<th>UK 2003(85)</th>
<th>UK 1998(96)</th>
<th>UK 2003 (NB)</th>
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<td>19-21 year olds, total</td>
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<td>25-28 year olds, general education</td>
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<tr>
<td>25-28 year olds, vocational</td>
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<td>17</td>
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Notes
UK (85) CEP formula from 1985 LFS ordering (for full information see file AppendixUKA.doc)
UK (96) CEP formula from 1996 LFS ordering (for full information see file Equivsnew.xls)
UK (NB) New Baseline CEP formula from 1996 ordering; includes women 60-64 but otherwise identical to UK (96)
### Table B.2 France: qualifications at level 3 and above: sensitivity analysis

<table>
<thead>
<tr>
<th>Age Group</th>
<th>1994</th>
<th>1998</th>
<th>2002</th>
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<tr>
<td>19-21 year olds, general education (1)</td>
<td>34</td>
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<td>19-21 year olds, general education (2)</td>
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<td>25-28 year olds, vocational (2)</td>
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<td><strong>Workforce (15 and over), total</strong></td>
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<td><strong>36</strong></td>
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### Notes

For full information see Annex A and Appendix: France

1. General education defined as all Baccalaureat and all degree qualifications
2. Vocational education defined as BTS (2 year vocational HE)
3. General education defined as general Baccalaureat and all degree qualifications (younger populations only as some of these qualifications relatively recent)
4. 28% of CAP/BEP allocated to Level 3 (proxy for % of CAP/BEP holding BEP)
<table>
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<tr>
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<th>Former BRD'93</th>
<th>Former BRD'97</th>
<th>Former BRD'02</th>
<th>Germany'02</th>
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<td>19-21 year olds, vocational</td>
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<td><strong>19-21 year olds, total</strong></td>
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<td><strong>48</strong></td>
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<td><strong>74</strong></td>
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<td>Population 16-64, vocational</td>
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**Notes**
Former BRD = Former Federal German Republic; for full information see Annex A and Appendix: Germany
General education = Abitur, Fachhochschulreife, Fachhochschulabschluss, all degrees
Vocational education = some Apprenticeship, Meister and Techniker
(a) 50% of apprenticeships allocated to Level 2 and 50% to Level 3

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<th>Germany &lt; Level 2</th>
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<td>5</td>
<td>6</td>
<td>1</td>
<td>28</td>
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<tr>
<td>25-28 (98)</td>
<td>13</td>
<td>18</td>
<td>64</td>
<td>12</td>
<td>22</td>
<td>27</td>
<td>36</td>
<td>14</td>
<td>23</td>
<td>37</td>
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<tr>
<td>25-28 (03)</td>
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<td>22</td>
<td>62</td>
<td>11</td>
<td>21</td>
<td>36</td>
<td>40</td>
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</tr>
<tr>
<td>ECACT (98)</td>
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<td>ECACT (03)</td>
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<td>28</td>
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<tr>
<td>ALLWORKAGE (98)</td>
<td>13</td>
<td>14</td>
<td>50</td>
<td>n/a</td>
<td>20</td>
<td>21</td>
<td>19</td>
<td>18</td>
<td>n/a</td>
<td>31</td>
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<tr>
<td>ALLWORKAGE (03)</td>
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<td>25</td>
<td>22</td>
<td>18</td>
<td>20</td>
<td>33</td>
</tr>
</tbody>
</table>

Notes:
(1) Singapore 20-24 and 25-29 (2) Singapore, France “ALL WORKAGE” = population aged 15 and over
ECACT – ECONOMICALLY ACTIVE. Figures may not add to 100 due to rounding.
Annex A

ALLOCATION OF QUALIFICATIONS TO UK NATIONAL QUALIFICATION FRAMEWORK (NQF) LEVELS

The UK National Qualifications Framework
For information on the UK National Qualifications Framework and a description of the Framework levels go to http://www.qca.org.uk/qualifications/types/493.html

Allocation of UK qualifications to UK NQF levels
For the purposes of international comparisons, UK qualifications have not been allocated in the same proportions as in the NQF framework. Instead, allocations reflect the need to achieve equivalence with qualifications in the other countries in the audit.

The qualifications assigned to the four Levels using the 1985 Labour Force Survey ordering are shown below. Qualifications in italics classified as vocational.

<table>
<thead>
<tr>
<th>Level 3</th>
<th>All allocations 100% unless otherwise stated. All aged 16-64 (other groups).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Higher degree</td>
</tr>
<tr>
<td></td>
<td>First degree</td>
</tr>
<tr>
<td></td>
<td>Other degree</td>
</tr>
<tr>
<td></td>
<td>BTEC HNC/HND</td>
</tr>
<tr>
<td></td>
<td>Secondary Teaching</td>
</tr>
<tr>
<td></td>
<td>Primary Teaching</td>
</tr>
<tr>
<td></td>
<td>Nursing</td>
</tr>
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<table>
<thead>
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<th>Level 3</th>
<th>All allocations 100% unless otherwise stated. All aged 16-64 (other groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BTEC ONC/OND</td>
</tr>
<tr>
<td></td>
<td>City &amp; Guilds qualification 40%</td>
</tr>
<tr>
<td></td>
<td>One or more A-level 70% (19-21 and 25-28 80%; active population 70%)</td>
</tr>
<tr>
<td></td>
<td>(G) NVQ 3 (from 1996)</td>
</tr>
<tr>
<td></td>
<td>Other qualifications 10%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level 2</th>
<th>All allocations 100% unless otherwise stated. All aged 16-64 (other groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>City &amp; Guilds qualification 40%</td>
</tr>
<tr>
<td></td>
<td>One or more A-level 30% (19-21 and 25-28 20%; active population 30%)</td>
</tr>
<tr>
<td></td>
<td>(G) NVQ 2 (from 1996 onwards)</td>
</tr>
<tr>
<td></td>
<td>One or more O-level passes 30% (19-21 and 25-28 40%; active population 30%)</td>
</tr>
<tr>
<td></td>
<td>Other qualifications 35%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level 2</th>
<th>All allocations 100% unless otherwise stated. All aged 16-64 (other groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>City &amp; Guilds qualification 40%</td>
</tr>
<tr>
<td></td>
<td>Apprenticeship without recognised vocational qualification</td>
</tr>
</tbody>
</table>
One or more O-level passes 70% (19-21 and 25-28 60%; active population 70%)
CSE < Grade 1
Other qualifications 55%
No qualifications
Don’t Know

Allocation of UK qualifications using the 1996 Labour Force Survey Ordering

This ordering used to create New Baseline (NB) for 2003 which includes women aged 60-64 not previously included. Qualifications in italics classified as vocational.

> Level 3
All allocations 100% unless otherwise stated. All aged 16-64 (other groups).
Higher degree
NVQ level 5
First degree
Other degree
NVQ Level 4
Diploma in higher education
HNC,HND,BTEC etc higher
Teaching, further education
Teaching, secondary education
Teaching, primary education
Teaching, level not stated
Nursing etc
RSA higher diploma
Other HE below degree

Level 3
All allocations 100% unless otherwise stated. All aged 16-64 (other groups)
NVQ level 3
GNVQ advanced
One or more A level or equivalent 78% (19-21 88%; 25-28 70%; active population 74%)
RSA advanced diploma
OND,ONC,BTEC etc, national
City & Guilds advanced craft
Scottish CSYS 67%
SCE higher or equivalent 59% (19-21 73%; 25-28 50%; active population 56%)
One or more AS level or equivalent 6% (19-21 and 25-28 17%; active population 8%)
Other Qualifications 10%

Level 2
All allocations 100% unless otherwise stated. All aged 16-64 (other groups)
One or more A level or equivalent 22% (19-21 12%; 25-28 30%; active population 26%)
Scottish CSYS 33%
SCE higher or equivalent 41% (19-21 27%; 25-28 50%; active population 44%)
One or more AS level or equivalent 20% (19-21 and 25-28 26%; active population 24%)
Trade apprenticeship 51%
NVQ level 2
GNVQ intermediate
RSA diploma
City & Guilds craft
BTEC, SCOTVEC first or general diploma
One or more O level, GCSE grade A-C or equivalent 40%
Other Qualifications 35%

> Level 2
All allocations 100% unless otherwise stated. All aged 16-64 (other groups)
One or more AS level or equivalent 74% (19-21 and 25-28 57%; active population 68%)
Trade apprenticeship 49%
One or more O level, GCSE grade A-C or equivalent 60%
NVQ level 1
GNVQ, GSVQ foundation level
One or more CSE below grade 1, GCSE below grade C
BTEC, SCOTVEC first or general certificate
SCOTVEC modules
RSA other
City & Guilds other
YT, YTP certificate
Other Qualifications 55%
No qualifications
Don't know

Allocation of French qualifications to NQF qualification levels
Qualifications in italics classified as vocational

> Level 3
All allocations 100% unless otherwise stated. All aged 16-64 (other groups)
All degrees and higher degrees
BTS, DUT etc. Qualifications requiring two years of study after the Baccalaureat

Level 3 All allocations 100% unless otherwise stated. All aged 16-64 (other groups)
General Baccalaureat
Technical Baccalaureat (classified as vocational for 19-21 and 25-28 year olds only)
Vocational Baccalaureat (classified as vocational for 19-21 and 25-28 year olds only)

Vocational Brevet (classified as vocational for 19-21 and 25-28 year olds only)

Level 2
All allocations 100% unless otherwise stated. All aged 16-64 (other groups)
Brevet 89%
CAP/BEP
< Level 2
All allocations 100% unless otherwise stated. All aged 16-64 (other groups)
Don't Know
No qualification or only Certificate of Primary Education (CEP)
Brevet 11%

Allocation of German qualifications to NQF qualification levels
Qualifications in italics classified as vocational

> Level 3
All allocations 100% unless otherwise stated. All aged 16-64 (other groups)
Degree or higher degree from University
Degree qualification from Fachhochschule
Meister or Techniker certificate or Fachschulabschluss

Level 3
All allocations 100% unless otherwise stated. All aged 16-64 (other groups)
Hochschulreife (Qualification giving right to enter university or Fachhochschule)
Fachhochschulreife (Qualification giving right to enter Fachhochschule)
Apprenticeship with prior school leaving qualification 94% (Active population and 16-64 90%)

Level 2
All allocations 100% unless otherwise stated. All aged 16-64 (other groups)
Leaving School Certificate of the Realschule
Apprenticeship with leaving certificate from the Polytechnische Oberschule of the DDR (Germany 2002 only)
Apprenticeship with prior school leaving qualification 6% (Active population and 16-64 10%)9
Apprenticeship without prior school leaving qualification

Level 1
All allocations 100% unless otherwise stated. All aged 16-64 (other groups)
Leaving Certificate of the Polytechnische Oberschule of the DDR (Germany 2002 only)
Leaving Certificate of the Secondary Modern School (Hauptschulabschluss)
Others (includes Don’t Know, No Response and No Qualifications)

Allocation of US qualifications to NQF qualification levels
All allocations 100% unless otherwise stated. All aged 16-64 (other groups)

> Level 3
Bachelor or higher degree including professional
Associate degree

9 Apprenticeships where the holders have a school leaving certificate from the Hauptschule or the Realschule have been discounted to allow for the small proportion of apprenticeships which are of two rather than 3 or 3+ years duration.
Level 3
Some college

Level 2
High School graduation only 50%

<Level 2
High School graduation only 50%
Less than High School graduation

Allocation of US qualifications to NQF qualification levels
All allocations 100% unless otherwise stated. All aged 16-64 (other groups)

> Level 3
Degree: university degree
Diploma: diplomas from polytechnic and institutes of higher education

Level 3
A level or equivalent, including: ITC; CBS; Teacher Training and Nursing Certificates

Level 2
One or more O-level passes or equivalent: NTC grade-2; Trade Certificate; Preliminary Certificate in Business Studies; Certificate in Office Studies

< Level 2
One or more N-level passes, Certificate of vocational training; NTC-3; Certificate of Competency; Primary School Leaving Certificate; no certification from primary school and never attended school
Annex B

NOTE ON STANDARD ERRORS IN SAMPLE-BASED NATIONAL SURVEYS

Since all analysis in this report is based upon data from samples of the full national populations, the proportions stated to be at particular qualification levels will be estimates of the true proportions in the population, with potential differences between the estimates and the true figures being caused by sampling error. Standard errors provide an indication of the potential size of such errors. The true proportion in the population is, with 95% certainty, expected to be approximately 2 standard errors on either side of the estimated proportion. In the UK LFS data used in this report, the standard error of any estimate based on data for the full working age adult population of a particular gender, either male or female, is approximately ¼ of 1%. Thus, we can be 95% sure that the true proportion in the UK population is +/- one-half a percentage point around the estimated proportion in the report. For the analysis of smaller age groups, say 19-21 year olds, the standard error is about 1%, and thus the true proportion in the population of this age may be +/- 2 percentage points around the estimated figure. For the French and the German data, the standard errors will be smaller, given the proportionally larger data sets available for those countries, while the reverse is true for the US.
Appendix: UK

The UK data in the Third Skills Audit: International Comparisons of Qualifications uses two different time series data sets. The first provides data for 1994, 1998 and 2003 and is based on the 1985 ordering of Labour Force Survey (LFS) qualifications data. The second series provides data for 1998 and 2003 only and is based on the 1996 ordering of LFS qualifications data.

The 1985 categories are as follows:
1 Higher degree
2 First degree
3 Other degree
4 BTEC HNC HND
5 Teaching secondary
6 Teaching primary
7 Nursing etc.
8 BTEC ONC, OND
9 City and Guilds
10 A level and equivalent
11 Trade apprenticeship
12 O level or equivalent
13 CSE Below Grade 1
14 Other pro/voc quals.
15 No qualification
16 NA
17 DNA

In 1989, the teaching qualifications are further split by creating the category of teacher in further education.

A new category, YTS certificate is added. Also we have a `don=t know= box

These changes should be dealt with by combining teaching further education with teaching secondary and by grouping YTS certificate with Other pro/voc quals.

Subsequently the 17 categories were expanded to 34. In general, this was just a more detailed breakdown of qualifications previously subsumed into one of the 17 categories.

The ranking of the qualifications was also changed, the City and Guilds category was split into 3 groups, advanced, craft and other with inevitable disruption of the ordering and placed below A-level instead of above it. The completed apprenticeship category was also moved from immediately above O-level to above C&G craft and RSA diploma. As a large number of those with apprenticeship completed also hold C&G craft qualifications, this move disrupted the consistency of the categories over time.

The 34 categories are
(1) Higher degree
(2) First degree
(3) Other degree
(4) Diploma in higher education*
(5) HNC, HND Higher BTEC, SCOTVEC
(6) Teaching FE
(7) Teaching secondary
(8) Teaching primary
(9) Teaching level not stated*
(10) Nursing etc
(11) Other higher qual below degree*
(12) RSA Higher diploma*
(13) A level and equivalent
(14) RSA Advanced Diploma*
(15) ONC/OND BTEC National
(16) City and Guilds advanced craft
(17) Scottish CSYS or equivalent* (a)
(18) SCE Higher or Equivalent* (b)
(19) A/S level or equivalent*
(20) Trade apprenticeship
(21) RSA diploma*
(22) City and Guilds craft
(23) BTEC/SCOTVEC First Diploma*
(24) O level or equivalent
(25) CSE below Grade 1
(26) BTEC General Certificate*
(27) YT, YTP
(28) SCOTVEC National certificate*
(29) RSA Other*
(30) City and Guilds other
(31) Other qualifications
(32) No qualifications
(33) NA
(34) DNA
* new entry
(a) Level above Highers - designed to encourage independent study
(b) University entrance qualification - 5 subjects taken in one year

Because of the problems created by the 1993 changes to the ranking and the splitting of C&G qualifications, we first recombined all the C&G qualifications and located them in the rank position where they had been pre 1993. We also restored the ONC/OND to its original ranking and moved apprenticeship to its pre 1993 position just above O-level. It should be noted that as a result of the reordering in 1993 which placed C&G below A-level and our subsequent re-ordering which placed it above, those who, in 1993 reported both C&G qualifications and A-level would have been reported as holding A-level qualifications and subsequently, in our re-ordering, also classified to A-level. Again, we do not believe this group to be a large one. We thus ended up with 32 categories.

(1) Higher degree
(2) First degree
(3) Other degree
(4) Diploma in higher education*
(5) HNC, HND Higher BTEC, SCOTVEC
(6) Teaching FE
(7) Teaching secondary
(8) Teaching primary  
(9) Teaching level not stated*  
(10) Nursing etc  
(11) Other higher qual below degree*  
(12) ONC/OND BTEC National  
(13) RSA Higher diploma*  
(14) City and Guilds  
(15) A level and equivalent  
(16) RSA Advanced Diploma*  
(17) Scottish CSYS or equivalent*  
(18) SCE Higher or Equivalent*  
(19) A/S level or equivalent*  
(20) RSA diploma*  
(21) BTEC/SCOTVEC First Diploma*  
(22) Trade apprenticeship  
(23) O level or equivalent  
(24) CSE below Grade 1  
(25) BTEC General Certificate*  
(26) YT,YTP  
(27) SCOTVEC National certificate*  
(28) RSA Other*  
(29) Other qualifications  
(30) No qualifications  
(31) NA  
(32) DNA  
* new entry

How should we collapse our 32 categories to be consistent with the 1985 17 categories?

**Suggested classification**

<table>
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<tr>
<th>Category</th>
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<th>1985</th>
<th>1993</th>
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<td>1</td>
<td>1</td>
</tr>
<tr>
<td>First Degree</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Other Degree</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>BTEC, HNC, HND</td>
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<td>4</td>
<td>4,5,11,13</td>
</tr>
<tr>
<td>Teaching secondary</td>
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<td>6,7</td>
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<td>Teaching primary</td>
<td></td>
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<td>8,9</td>
</tr>
<tr>
<td>Nursing etc</td>
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<tr>
<td>BTEC, ONC, OND</td>
<td></td>
<td>8</td>
<td>12,16</td>
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<tr>
<td>CITY&amp;GUILDS</td>
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<td>14</td>
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<td>A-Level and equivalent</td>
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<td>Code 2</td>
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<tr>
<td>CSE Below Grade 1</td>
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<td></td>
</tr>
<tr>
<td>Other pro/voc qualifications</td>
<td>14</td>
<td>20, 21, 25, 26, 27, 28, 29</td>
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</tr>
<tr>
<td>No qualifications</td>
<td>15</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>NA</td>
<td>16</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>DNA</td>
<td>17</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

Information on the 1996 LFS ordering and the allocation of the 1996 categories to NQF equivalent levels for the purposes of the Third Skills Audit can be found in Annex.
Appendix: France

1. Data on stocks of qualification

1.1. Data sources

The data presented in the tables on stocks of qualifications in this appendix are based on the Enquête sur l’emploi. The data have been supplied as special tabulations produced by INSEE, Paris. The Enquête is undertaken on a yearly basis by the French National Statistical Office (Institut national de la statistique et des études économiques; INSEE).

1.2. Methodology and procedures of the Enquête Emploi

The Enquête is a representative survey sampling households accounting for approximately 1/300 of the French population at or above the age of 15. This amounts to roughly 75 000 households with 170 000 participants. The sample is stratified on a geographic basis with all households in randomly selected neighbourhoods being included and one third of the sample being replaced every year. Within a selected household all members are asked questions regarding employment, search for employment, level of qualification, occupation one year ago and personal socio-structural details.

The survey is carried out by interviewers responsible for specific areas who fill in the forms in co-operation with the respondents. The interviewer is not required to talk to every participant individually, quite often one member of the household would answer the questions on behalf of the others. The data obtained in this way relate to one reporting week to which the survey refers to although interviews may be stretched over a period of about one month for practical reasons.

1.3. Evaluation and quality of the Enquête data

The fact that it is carried out year by year has been a major argument for using the Enquête emploi. It enables the analysis of most recent years and also of changes and trends over time both of which cannot be conducted with census data. Furthermore, the categories applied in the Enquête already combine vocational and general qualifications in a single ranking which is widely used in official publications. The data collection method by interviews guarantees a certain quality and completeness of responses.

There are, however, drawbacks in using data from this source, most notably the small sample size which does not permit meaningful analyses of small groups or cross tabulations, e.g. with detailed activity sectors and qualifications.

Given the size of the sample, response rates acquire even more importance in respect to reliability. The following table (Fig. 1) shows the non-response-rates of individuals for the years 1988-1993:

---

10 The population of the Enquête refers to Metropolitan France only, i.e. excluding overseas departments and territories (DOM, TOM). It should be noted that, contrary to the practice in the UK LFS, there is no upper age limit on the population sampled.

11 Interviewers are also to ensure that all actual households in their neighbourhood are included in the sample, thus accounting for newly established households and changes from year to year.
--- | --- | --- | --- | --- | --- | ---  
2.8 | 3.2 | 2.6 | 2.1 | 2.3 | 2.6 |  
Prolonged absence | 3.6 | 4.4 | 5.7 | 4.8 | 4.8 | 5.0  
Total Non-response rate | 6.4 | 7.6 | 8.3 | 6.9 | 7.1 | 7.6  

Source: Enquêtes emplois 1988-1993

Figure 1: Non-responses of individuals as a percentage of the total sample

It can not be assumed that participants in the non-response category are equally distributed across the sample population. Non-response rates have been found to be higher in urban agglomerates and for single person households. Further, it seems likely that certain target variables correlate with this category, e.g. unemployed may be more inclined to refuse to answer, although this has not been validated statistically. Overall, distortions due to non-response are likely but so far no estimates of their effects have been published\(^\text{12}\). On the other hand, it seems just to say that the scale of these effects is probably not significant enough to cast serious doubt on the comparably high reliability of the *Enquête emploi*.

Another issue is the consistency of the data obtained in the survey which is of particular relevance when looking at time series. The last major modification of the questionnaire took place in 1990 and included substantial changes in the section on education and qualifications. This reflected the necessity to take account of a growing number of people switching between study, employment, service, etc. which could not be accommodated in the old schema.

1.4. Terms and definitions

The following is a brief overview of the terms employed in the *Enquête emploi* and the tables on stocks of qualifications below\(^\text{13}\).

1.4.1. Population categories

The INSEE uses the definitions of the Bureau International du Travail (BIT) to define the terms active population, employed and unemployed population. The employed population (population active occupée), therefore, includes all persons at or above the age of fifteen who have been employed, salaried or not, for at least one hour in the reference week of the *Enquête*\(^\text{14}\). The unemployed (chômeurs) are those who are without employment, available for work, and actively looking for work. The active population (population active) is the sum of employed and unemployed.

These definitions allow e.g. students or pensioners who have a part-time job or are looking for one to be included in the active population. The same person would, however, also be counted as enrolled in education or retired, both of which are commonly seen to form part of the inactive

\(^{12}\) The raw results of the responses of each stratum are projected linearly to 100\%, implicitly assuming a random distribution of non-respondents within each stratum.

\(^{13}\) For a more detailed description of population categories see the introduction part of the *Enquête emploi - Résultats détaillés* publications (INSEE, annually). Elaboration about qualifications and diplomas can be found in the main text.

\(^{14}\) This includes people employed but absent from work (e.g. maternity, illness, strike, holiday, etc.), self-employed, helping family members, and service at the armed forces.
population. As a result of this overlap of statistical categories, adding up e.g. enrolment ratios and activity rates of a certain age group does not necessarily produce a sum of 100%.

While annual INSEE publications based on the Enquête only show tables about the active population, it has been possible to obtain data about the total population targeted by the Enquête from CEREQ. This term includes all persons of at least fifteen years of age who live in metropolitan France.

1.4.2. Qualification categories

The Enquête emploi asks respondents for their highest qualification in the following three areas: enseignement general (general education up to baccalauréat standard), enseignement technique ou professionelle (vocational education up to baccalauréat standard), enseignement supérieur ou supérieur technique (higher education). In the tables presented here, vocational and general qualifications have been combined in a single ranking comprising 6 levels

The qualifications which make up the groups used for classification of the population in this study are as follows:

- CEP (Certificat d’Etudes Primaires) Before the 1950s, this was the qualification gained by those who reached a given standard at the end of elementary schooling (age 14). Since then, it is taken by only a small minority.

- Brevet (Brevet du collège) Certifies a satisfactory standard in the main subjects of the compulsory school curriculum. Awarded to those who satisfy the examiners when in the fourth and final year class (3ème) of the compulsory schooling period

- CAP (Certificat d’aptitude professionnelle), the traditional qualification of a skilled worker, which now is awarded after nine years of general schooling and two years of vocational education. It is intended to provide a rather specialised and practical training in some 300 specialities;

- BEP (Brevet d’études professionnelles), is also awarded after nine years of general schooling and two years of vocational education but was more recently established with a broader and stronger basis of general education. It is provided in 59 different specialities;

- Bac pro (Baccalauréat professionnel), requiring three years after BEP. Its output is not very large yet, as it was introduced only in 1985/86, but it is growing and revealing of recent developments. It was offered in 1993 in 47 different specialities, compared with 20 in 1990;

- the Baccalauréat is normally obtained after twelve years of education by an increasingly large group. There is a general and a technical Baccalauréat.

- BTS (Brevet de technicien supérieur), requiring two years of vocational education in "lycées" after the Baccalauréat;

- DUT (Diplôme universitaire de technologie), which is equivalent to the BTS in terms of years of schooling, but takes place in university colleges.
- BP (*Brevet professionnel*) is available only for adults in continuing education. It is more or less at the same level as the *Baccalauréat*, but more vocationally oriented.

- Degree (*Licence*) usually requires a minimum of four years of university study after the Baccalaureat.

- Masters Degree (*Maitrise*) a one year course of study, often with a strong vocational or applied content taken after the *Licence*.

- Doctorate (*Doctorat d’Etat*) requires a further period of study (usually 3 years) following the *Licence*.

The allocation of the French *Enquête sur l’emploi* highest qualification categories to equivalent NQF levels is at Annex A.
Appendix: Germany

The following section provides an overview of the definitions of the terms used in the Mikrozensus, insofar as they are relevant for the tables displayed in the data set.

(a) General Categories

The term population refers to all people who have their main domicile in the area covered by the survey. The main domicile is defined as the residence used predominantly by the individual or, if in doubt, as the place where the centre of one's relations / family is located. Foreigners with their main domicile in the survey area are included. Some tables refer to the population between 16 and 64 years of age.

The terms active population, employed and unemployed population are based on the concept of 'gainful employment' (Erwerbskonzept). All individuals who gain some income through work during the week of the survey are counted as employed, regardless of how much income they gain or how many hours they work. According to this definition, a pensioner who works just one hour per week is counted as employed. Helping family members (for example in agriculture) and apprentices in acknowledged vocations are also included in the employed population. All those who (i) do not work in the above sense and (ii) are looking for work are counted in the Mikrozensus as unemployed. The active population is the sum of the employed and the unemployed population.

(b) Schooling and Vocational Qualifications

In the Mikrozensus participants over 14 years of age are asked to classify their highest general schooling qualification as one out of six categories and their last vocational qualification as one out of seven categories. First the definitions of the schooling categories are described followed by the vocational categories, and finally there is an explanation as to how those two tiers were combined into a single ranking.

(i) The lowest category consists of those without any of the above schooling qualifications, including those who did not answer the question, in particular since 1991.

(ii) The first achievable schooling qualification is the Hauptschulabschluß. The Hauptschul certificate is obtained by successfully completing the 9th class of a general school, i.e. the pupils are normally 15 years or over.

(iii) Realschulabschluß includes all those who have successfully completed the final year of a Realschule, an Abendrealschule (Realschule on evenings) or the Realschul-branch of a common school (Gesamtschule). The successful completion of class 10 in the Gymnasium and of the final year in a number of full-time and part-time vocational colleges are regarded as equivalent. The pupils are 16 year or over.

In the Mikrozensus, there is an extra category for those who have taken the examination of the Polytechnische Oberschule of the former GDR. This exam was taken at the end of compulsory education. Thereafter, individuals went on to further general or vocational education. The Standing Committee of the Ministers for Education of the Federal Länder (Kultusministerkonferenz) has acknowledged this exam as equivalent to the Realschulabschluß.
Therefore we have included the respective figures in the category \textit{Realschluabschluß or equivalent}, while showing the data in an additional column as well.

(iv) A \textit{Fachhochschulreife} is obtained by successfully completing the 12th year in a \textit{Gymnasium} or a similar full-time general or vocational college (\textit{Fachoberschule} or \textit{Höhere Berufsfachschule}), i.e. the knowledge taught there is two years full-time schooling above the \textit{Realschul-level}. Accordingly, the students are 18 or over.

(v) The \textit{Abitur} (more formally called \textit{Hochschulreife}) is taken mainly at a \textit{Gymnasium}, but also on other schools that award the right to enter university. In full-time schools) the \textit{Abitur} is taken three years after having achieved the \textit{Realschulabschluß}. The students are 19 or over.

(vi) We have reduced the seven categories describing vocational qualifications into six by combining two of them: 'No vocational qualification' (including those who did not answer the question) is combined with ‘without information on the type of qualification’. This category is very heterogeneous and frequently includes the category 'vocational internship' (berufliches Praktikum). A vocational internship in the context of the \textit{Mikrozensus} is an internship of at least six months insofar as it takes place before or during higher education at general or vocational colleges, schools, universities or other scientific institutions, but outside these institutions. A typical example would be the case of an individual who after the \textit{Abitur} wants to go on to a specialised college, which as a condition of entry requires an extended internship. This can be the case for example in personal care and health-related subjects. The category is very small and we regarded it as negligible, the more so as most of those who do such a vocational internship go on to higher general or vocational education.

(vii) The category \textbf{apprenticeship} embraces all those who did an acknowledged apprenticeship of at least two years length, including those with a final exam of a \textit{Berufsfachschule}. The \textit{Berufsfachschulen} are full-time vocational colleges for a number of acknowledged courses.

(viii) \textbf{Meister} are counted together with \textbf{Techniker} and those with a equivalent \textit{Fachschulabschluß}. We have also included those with a \textit{Fachschulabschluß of the former GDR}.

(ix) \textit{Fachhochschulabschluß} includes those with a final exam of a \textit{Fachhochschule}, a higher engineering or equivalent college or a college of advanced vocational studies (Berufsakademie).

(x) Among the \textbf{university degrees} are all sorts of final exams at universities, including master-degrees, diplomas, state exams and teacher exams, and also higher degrees like doctorates.

Based on the cross-tabulation of categories i to v with categories vi to x we have achieved a single ranking with 11 categories. This is set out in Annex A. This ranking can be read from top to bottom, i.e. those with, for example, a \textit{Fachhochschulabschluß} are counted in the second highest category, no matter whether they have done an \textit{Abitur} or a \textit{Fachhochschulreife} or anything else, provided they have no university degree (in which case they would be counted among the highest category). In the tables, 'apprenticeship' refers to those who have completed only an apprenticeship, without having achieved any of the formal schooling qualifications.

Data supplied by \textit{Statistisches Bundesamt} in 2003 for 1997 and 2002 was fitted to a different template from the one given above, as shown in the example given below
<table>
<thead>
<tr>
<th>Alter von ... bis unter ... Jahren</th>
<th>Insgesamt</th>
<th>mit beruflichem Bildungsabschluss</th>
<th>ohne beruflichen Bildungsabschluss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haupt- (Volks-)schulabschluss</td>
<td>653</td>
<td>271</td>
<td>259</td>
</tr>
<tr>
<td>Abschluss der polytechnischen</td>
<td>38</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Realschul- oder gleichwertiger A</td>
<td>915</td>
<td>419</td>
<td>391</td>
</tr>
<tr>
<td>Fachhochschulreife</td>
<td>112</td>
<td>26</td>
<td>17</td>
</tr>
<tr>
<td>Hochschulreife</td>
<td>508</td>
<td>38</td>
<td>24</td>
</tr>
<tr>
<td>Sonstige Abgabe</td>
<td>512</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td><strong>Insgesamt</strong></td>
<td><strong>2 828</strong></td>
<td><strong>795</strong></td>
<td><strong>727</strong></td>
</tr>
</tbody>
</table>

This in turn was fitted back to the format used in the previous Skills Audit reports by collapsing the two categories ‘ohne Angabe etc’ and ohne berufliches Bildungsabschluss’ into the ‘Rest’ category. The transformation to a single ranking was then carried out as before.

Aged 19-21  Lehre  Fachsch.  Fach DDR  Fachhoch  Universität  Rest
Hauptschulabschluss
Abschluss DDR
Realschulabschluss
Fachhochschulreife
Hochschulreife
Rest
Total

55
Appendix: Singapore

Data on the stocks of qualifications held by the adult population in Singapore have been obtained from the Singapore Labour Force Survey reports. The Manpower and Statistics Department of the Ministry of Manpower (formerly Ministry of Labour) has been conducting the mid-year Labour Force Survey since 1974 and the 2002 June Labour Force Survey is the twenty-sixth in the series.

The survey covers the population living in private households on the main island of Singapore and therefore excludes certain categories including:15

- Construction workers living at worksites
- Persons commuting daily from abroad to work in Singapore
- Persons living in off-shore islands
- Persons living in institutional households
- Foreign service personnel living in military establishments
- Wayfarers on land and persons on ships and boats
- Persons in transit on ocean-going boats.

The survey is based on a sample of private households, stratified according to house types (eg HDB public flats by number of rooms; detached, semi-detached or terraced houses; private flats and apartments etc). The effective sample size for the June survey is 25,000 homes, some 5 per cent of the total. Sample data are blown up to national estimates by the sampling fraction, i.e. based on information collected from a sample survey of the total population. No adjustment is made.16

For the purposes of estimating the stocks of qualified people in Singapore, the LFS data and reports are subject to certain limitations: the sample size is relatively small, the latest year for which data are available is 2002, and the classifications by industrial sector, occupation and highest qualifications are very broad brush (with data coded according to 10 industrial sectors, 8 occupations and 7 educational levels).

The reports of the LFS reports include tables on levels of educational attainment according to 7 classifications. These are as follows:

i) **Never Attended School**: lower primary: those not attaining primary school leaving certificate (PSLC) or its equivalent.

ii) **Primary**: persons who have obtained the PSLC.

iii) **Lower Secondary**: persons who attended secondary school but did not attain O levels. This includes those who attained as their highest qualification: N level, Certificate of vocational training; NTC-3; Certificate of Competency.

iv) **Secondary**: persons who have obtained at least one O level or equivalent: NTC grade-2; Trade Certificate; Preliminary Certificate in Business Studies; Certificate in Office Studies.

v) **Post-Secondary**: persons who have obtained an A level or equivalent, including: ITC; CBS; Teacher Training and Nursing Certificates.

vi) **Diploma**: diplomas from polytechnic and institutes of higher education.

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vii) *Degree:* university degree.

The categories designated as 'secondary' and 'post-secondary' include the qualifications which were judged in our first report on 'International Comparisons of Skills Supply and Demand' (Steedman and Green, 1996) to be equivalent to the UK levels 2 and 3 respectively. Not all of those in the LFS 'secondary' and 'post-secondary' categories can be considered to have achieved the equivalent of levels 2 and 3 respectively because they may have less than 5 O levels or 2 A levels (which would be equivalent to the UK benchmarks). This creates a problem for making any deductions about the proportion of the adult population who have achieved the equivalent of UK level 2. However, the problem is mitigated in the case of the post-secondary category, since it is known from the flows data that virtually all those who obtain any A levels do in fact obtain two or more, at least for recent years. Some 80 per cent of those gaining O levels in 1998 had 5 plus.  

The age bands used for presenting the data in the reports are: 15-19, 20-24, 25-29 and total 15 + population. This does not exactly correspond to the categories in data available for the other countries in this report, although the 25-29 category is close.

The allocation of the Singapore Labour Force Survey highest qualification categories to equivalent NQF levels is at Annex A.

**Stocks of qualifications in Singapore**

The majority (57.2 per cent) of the 15+ population in Singapore in 2002 had a qualification at level 2 or higher. Thirteen per cent of men and women had a university degree and a further 7.3 per cent a higher education diploma, so that 20.3 per cent in all were qualified at higher education level. The younger age groups are very much better qualified than the older age groups, reflecting the rapid improvement in the flows of qualified young people over the past 20 years. It is notable that a very substantial proportion of those in their 20s now have sub-degree diplomas which are benchmarked at the level of the HND in the UK. Amongst the 20-24 year olds 20.2 per cent had a diploma as their highest qualification in 2002. Only 16.7 per cent of this age group had no qualification at level 2 or above.

As one would expect, the employed population was better qualified than the 15+ population as a whole since the latter includes the younger age groups who have not completed their education as well as the less qualified groups of unemployed and retired adults. Amongst the employed, 67.3 per cent had a qualification at level 2 or higher, 17.9 per cent had a university degree and 9.8 per cent a diploma, making 27.7 per cent qualified at higher education level.

Amongst the economically active population in 2002, for which we have figures broken down by gender, males are slightly better qualified than females with 40.3 per cent of males having a qualification at level 2 or above against 36.7 per cent for females. Males are slightly more likely to have a diploma than females (10.8 per cent to 8.6 per cent) and are slightly more likely to have a university degree (18.6 per cent against 16.8 per cent).

The employed population in Singapore is relatively polarised in terms of qualification levels. A substantial group at the top (27.7 per cent) have a higher education qualification. At the lower

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end, 32.7 per cent have no qualification at level 2 or above, and a further 28.3 per cent are only qualified at level 2, which in some cases will represent only one O level. At the intermediate level, there are only 11.3 per cent with level 3 as their highest qualification. The third of the employed population without a qualification at level 2 or above are mainly older workers who left school after primary education in the years before secondary education became generalized (ie those now 50 years and older who left school before the middle 1960s).


The Singaporean 15+ population was considerably better qualified in 2002 than it was eight years before. The proportion with higher education qualifications almost doubled during the 1994 to 2002 period (from 12.1 per cent to 20.3 per cent), with the proportion with university degrees rising from 7.6 to 13 per cent. Qualification levels amongst economically active women rose particularly fast, so that 25.4 per cent had a higher education qualification in 2002 compared with 13.8 per cent in 1994. Rapid rises in female stocks at higher education levels are accompanied by a decline in the proportion qualified at level 3 suggesting that young women progressing beyond lower secondary education tend to take the more academic route through A levels to higher education, rather than take technical qualifications at level three before exiting to the labour market.

Despite this general rise in qualification levels, however, there is still a very substantial group in the Singaporean adult population who have no qualifications at level 2 or above. The proportion of these in the 15+ population has declined some six percentage points since 1994, but still remains high at 42.8 per cent. The proportion of employed persons without level 2 was somewhat lower at 32.7 per cent. There has been a substantial increase in the proportion of younger people getting qualified to level 2 – up from 48.9 per cent of 15-19 year olds in 1994 to 54.8 per cent in 2002. However, these flows of more highly qualified young people into the adult population and labour force will only very gradually offset the very high proportion of older workers who have low levels of qualification. The majority (54 per cent) of 50-59 year old workers in 2002 still had no qualification at level 2 or above.18

Note on Polytechnic Diplomas and Growth of level 3 and Above Qualifications

Of the five countries considered here, Singapore shows the most rapid growth in higher level qualifications amongst its young people. Between 1994 and 2002, the proportions of 20-24 year olds and of 25 to 2919 year olds with a qualification at level 3 or above grew faster than the comparison groups in France, Germany, the UK and the US, as did the proportion of the total population with this level. Higher education qualification growth rates also outpaced the other countries. Forty Six per cent of the Singaporean 25-29 year olds had higher education qualifications in 2002 compared with 20 per cent for the total population, an age cohort disparity greater by a wide margin than in any of the other countries. Singapore now has a higher proportion than comparison groups in other countries of 20 to 24 year olds with a qualification at level 3 or above (although not of 25-29 year olds). It also has the highest proportion of 25-29 year olds with a tertiary level qualification (46 per cent as against the UK, the next highest, with 40 percent). How has this exceptional rate of growth been achieved?

Singapore has three main educational pathways after the end of lower secondary education. Young people graduating from the lower secondary schools with 6 or more higher grade O levels

19 28 year olds for countries other than Singapore
will normally proceed aged 15 to the Junior colleges or centralised institutes to take A levels, and from there progress to University. Those leaving with 5 or more higher grade O levels can proceed to the polytechnics to take 3 year vocational diploma courses which are equivalent to UK HNDs. Some of these will have achieved good enough grades to enter university but choose to take the short degree option; others will have fallen just below the strict threshold for university entry. Those that do not attain the 5 higher grade O levels will normally go on to vocational courses at the Institutes of Technical Educational (ITE). These are mostly level 2 or level 3 taught vocational courses, originally styled on City and Guilds qualifications, but in some cases they take the form of an apprenticeship organised through the ITE. In 1998, 27.6 per cent of 16 year olds were in Junior colleges or centralized institutes; 41.7 per cent were in polytechnics and 27.1 per cent were in vocational programmes run by the ITE.

What is immediately apparent from these participation figures is that the polytechnic provides the main internal progression route to level 3 and higher qualifications in Singapore. Leaving aside those who gain degrees abroad, most of the increase in level 3 and higher qualifications since 1990 has come through expansion of these polytechnic courses. The other two pathways have contributed much less to the qualification growth.

The number of students taking A level courses at junior colleges and centralised institutes has increased considerably over the past 25 years. In 1980 5716 students sat A level exams and 8.2 per cent of the cohort achieved two A levels passes plus two AO level passes. By 2000 this had increased to 12173 students taking A levels and 23.3 per cent of a cohort achieving two As and two AOs. However, most of this increase occurred in the 1980s. The proportion gaining two A and two AOs increased only marginally between 1990 and 2000 (from 20.7 per cent to 23.3 per cent). Although a new junior college was created in 2002, growth has been slow in the A level track during the past decade because the Government has deliberately limited expansion by maintaining very high entry requirements for the junior colleges and centralised institutes. This has been part of a general policy to limit those on the A level track to about a quarter of the cohort.

Unlike A level enrolments, ITE enrolments have increased substantially during our reference period. However, most students following ITE courses exit after level 2, so that only a very small proportion of a cohort gain a level 3 qualification via this route. ITE enrolment growth has not contributed substantially to the increase in level 3 qualification amongst young people in Singapore, as can be seen from the Labour Force Survey data. The decline in the proportion of 25 to 29 year olds in Singapore with a level 3 qualification as their highest level (from 12.0 in 1994 to 11.4 in 2002) may be partly because more of those who achieve A levels now go on to gain degrees and diplomas, but any change here is unlikely to be so great that it is masking a

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21 See ibid


substantial increase in level 3 ITE qualifications, given that ITE level 3 holders rarely progress to higher education.

Increases in rates of level 3 qualification in Singapore are largely attributable to the growth of enrolments in the polytechnics and to the growing proportion of the cohort gaining polytechnic diplomas. We noted in our previous report (Steedman, Green et.al 1997) that polytechnic diploma awards increased by 145 per cent in the decade between 1985 and 1994, with the 10844 awards issued in 1994 representing a rate of diploma acquisition estimated at 25 per cent of the age cohort. By 1998 there were 13904 graduations from polytechnic diploma courses, representing 35 per cent of a typical cohort. Taking the period 1994 to 2002, the proportion of the 25-29 population having a diploma as their highest qualification has doubled from 8.4 per cent to 16.6 per cent. Universities have also, of course, substantially increased their output of graduates during this period, with the proportion holding a degree rising from 14.3 per cent to 29.0 per cent. However, a substantial fraction of these actually progress via polytechnic diplomas.

The contribution made by the polytechnics to the exceptional growth in level three and above qualifications rates in Singapore between 1994 and 2002 is notable for a number of reasons. Singapore’s Polytechnics are unusual institutions. They enrol students onto level 4 vocational courses at a much younger age (usually 15 years old) than would be the case for equivalent courses in many other countries. They also draw students from the top half of the ability range (mostly from the second quartile) who have substantially better academic qualifications at lower secondary level (5 plus O levels) than would be the case for students on equivalent courses elsewhere. These students are fast-tracked to level 4 qualification through intensive three year courses which have high completion rates. The rate of progression would seem to compare very favourably with that of students entering post-compulsory vocational streams in the UK where they would be more likely to take 4 or 5 years to attain a HND.

The Singaporean polytechnic system, which is exceptionally well resourced, would seem to have gone some distance towards achieving the often elusive goal of a high status post-compulsory vocational pathway. It is this pathway that has made the major contribution towards increasing rates of level 3 qualification faster than other countries in our comparison. It is also notable that over half of the graduates from polytechnics gain engineering diplomas and that the annual award of these is double that in HND/HNC engineering in the UK (whose population is around 20 times the size).

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24 See ibid.
25 We do not have figures for the number university undergraduates who have come from polytechnics. However, we can judge from the figures we do have that it is significant. The 29.8 per cent of 25-29 year olds in 2002 who had degrees would mostly have taken their A levels between 1992 and 1995. During that period around 23 per cent of the cohort achieved two A levels plus two AOs. Given that some of these would not have gained the usual university entry requirement of 3 A levels at grade C or above, it seems clear that a significant proportion of the 2002 25 to 29 year olds graduates must have gained access to University via another route. In some cases this will have been by graduation abroad. In others it will have been via Singapore polytechnic diplomas.
26 Spending per student in non-university higher education in Singapore in 1995 was 12 286 US$ compared with 7225 US$ for all HE in the UK and 7447 US$ for non-university tertiary across the OECD as a whole (using 1995 World Bank PPP converter: see Green and Sakamoto, op cit, 2000).
27 See Green and Sakamoto op cit.
Appendix: USA

The Current Population Survey (CPS) is a monthly survey of households conducted by the Bureau of the Census for the Bureau of Labor Statistics in the US. The survey has been conducted for more than 50 years. Each month, interviewers contact the sampled units to obtain basic demographic information about all persons residing at the address and detailed labour force information for all persons aged 15 or over. The CPS is the primary source of information on the labour force characteristics of the US population.

Each month about 50,000 occupied units are chosen for interview. The sample is scientifically selected to represent the civilian non-institutional population. Some 3,200 of these households are contacted but interviews are not obtained because the occupants are not at home after repeated calls or are unavailable for other reasons. This represents a non-interview rate for the survey that ranges between 6 and 7 percent.

The CPS uses a rotating panel structure, with 8 panels being used to rotate the sample each month. A sample unit is interviewed for four consecutive months, and then, after an 8-month rest period, for the same four months a year later. Each month a new panel of addresses, or one-eighth of the total sample, is introduced. Thus, in a particular month, one panel is being interviewed for the first time, one panel for the second, etc, and one panel for the eighth and final time.

Interviewers use lap-top computers to administer the interview, asking questions as they appear on the screen and directly entering the responses obtained. The first and the fifth month-in-sample interviews are almost always conducted by an interviewer who visits the sample unit. Over 90 percent of month-in-sample 2 through 4 and 6 through 8 interviews are conducted by telephone.

The highest qualification variable allows respondents to indicate their highest qualification achievement from the following list:

- <1st grade
- 1 2 3 4 grade
- 5 6 grade
- 7 8 grade
- 9 grade
- 10 grade
- 11 grade
- 12 grade or no diploma
- High school graduate (high school diploma or equivalent)
- Some college but no degree
- Associate college degree - vocational
- Associate college degree - academic
- Bachelors degree
- Masters degree
- Professional school degree
- Doctorate

For the third Skills Audit (2004) the following allocation of US qualifications was made against the NQF qualification framework.
Allocation of US qualifications to NQF qualification levels (2004)

<Level 2  All with less than High School graduation; 50 per cent of those with High School graduation only

Level 2  50 per cent of those with High School graduation only;

Level 3  100 per cent of those with some college;

> Level 3 All with Associate degree; All with Bachelor or higher degree including professional

This allocation is different from the allocation made in the first Skills Audit (1996). Then the allocation was as follows:

<Level 2  All with less than High School graduation; all with High School graduation only

Level 2  All with ‘some college’

Level 3  All with Associate degree

> Level 3 All with Bachelor or higher degree including professional

The new allocations have been applied to CPS data for 1994, 1998 and 2003. This new time series data is used throughout the 2004 Skills Audit.

The reason for the changed allocation is as follows. On further investigation we revised our view of the ‘some college’ category following additional clarification from the Bureau of the Census in the US. We had originally assumed (1996) that the some college category comprised all those who attended a Community College or other institution after High School even if they had not graduated or attended only very basic courses. However, we were informed that this category is reserved for those who started a degree course, whether at Associate or Bachelor level and failed to graduate. This meant that some at least in this category would have attended the college-bound stream of the US High School and gained a graduation certificate which entitled them to apply for a college course. It therefore seemed more appropriate to locate this group at NQF Level 3. As a consequence, we felt it logical to allocate a proportion of non-college bound US High School graduates to UK Level 2 and the very low attainers within the HS framework and those who failed to gain a HS graduation certificate or equivalent to < Level 2. Some doubt remains over the quality of the Associate Degree. Some academic Associate Degree courses are recognised by US universities as exempting from part of the Bachelor course. Others are strongly vocational. Since 1996 the > Level 3 offering in the UK has widened with more sub-degree qualifications on offer eg. NVQ 4 and Foundation Degrees. It therefore seems sensible to broaden this category for the purpose of equivalence with the US and to include Associate Degrees in the > Level 3 category. In future, it seems likely that the > Level 3 category in the UK, with a greater mix of vocational and academic qualifications, will start to converge more closely on the tertiary category in the US.

The allocation of the US CPS highest qualification categories to equivalent NQF levels is also at Annex A.