

Making Every Penny Count



Efficiency and effectiveness
in Scottish higher education



Introduction

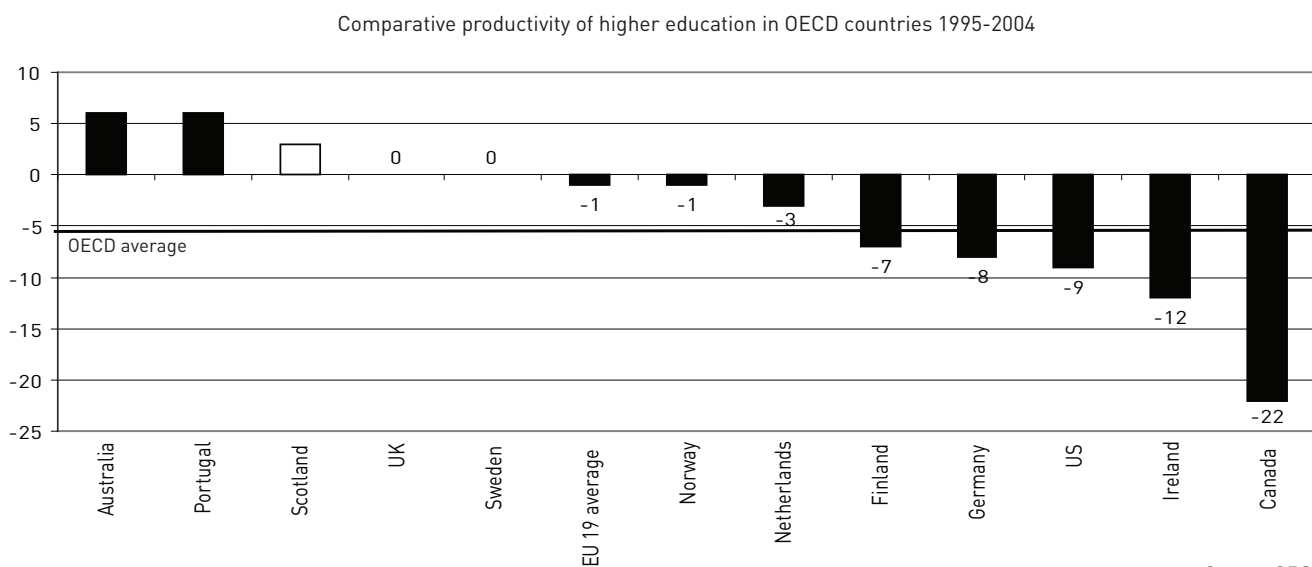
Scotland's universities and higher education institutions are generally regarded as of high quality and as effective and efficient. This report attempts to benchmark Scottish universities against a number of comparators to help assess the level of quality, effectiveness and efficiency.

Efficient use of public money

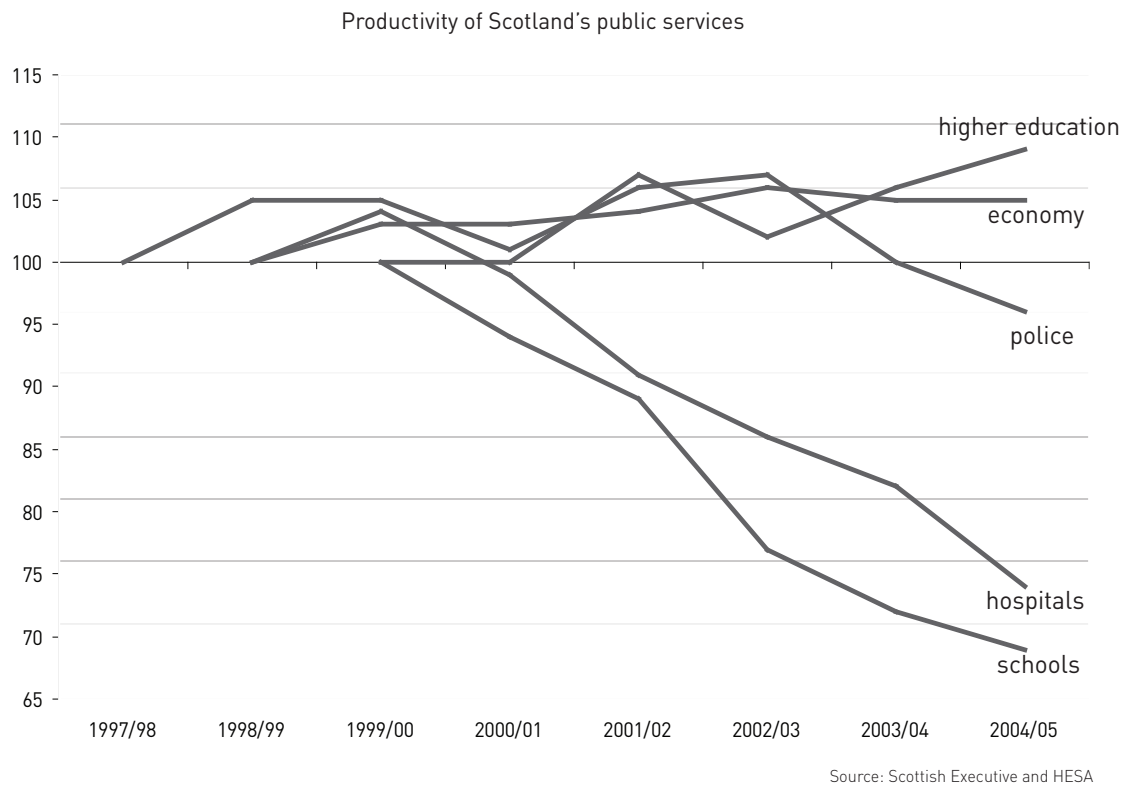
Universities Scotland commissioned a statistician to assess the total factor productivity (the measure of how effectively an organisation uses its human and financial resources) of the Scottish higher education sector over the last ten years. The result was:

3.1 per cent total factor productivity

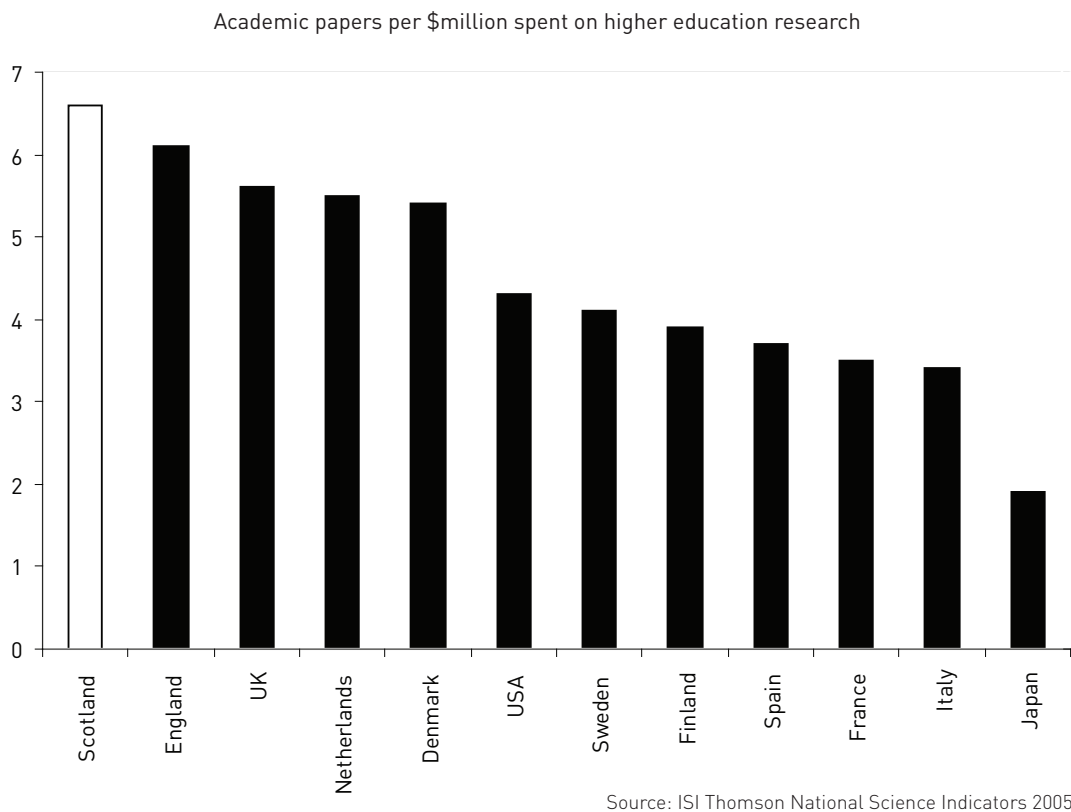
This compares well with other OECD countries (note that the basis of the calculations of the other countries is slightly different but nevertheless gives an indication of relative performance). Scotland is also considerably above the OECD average.



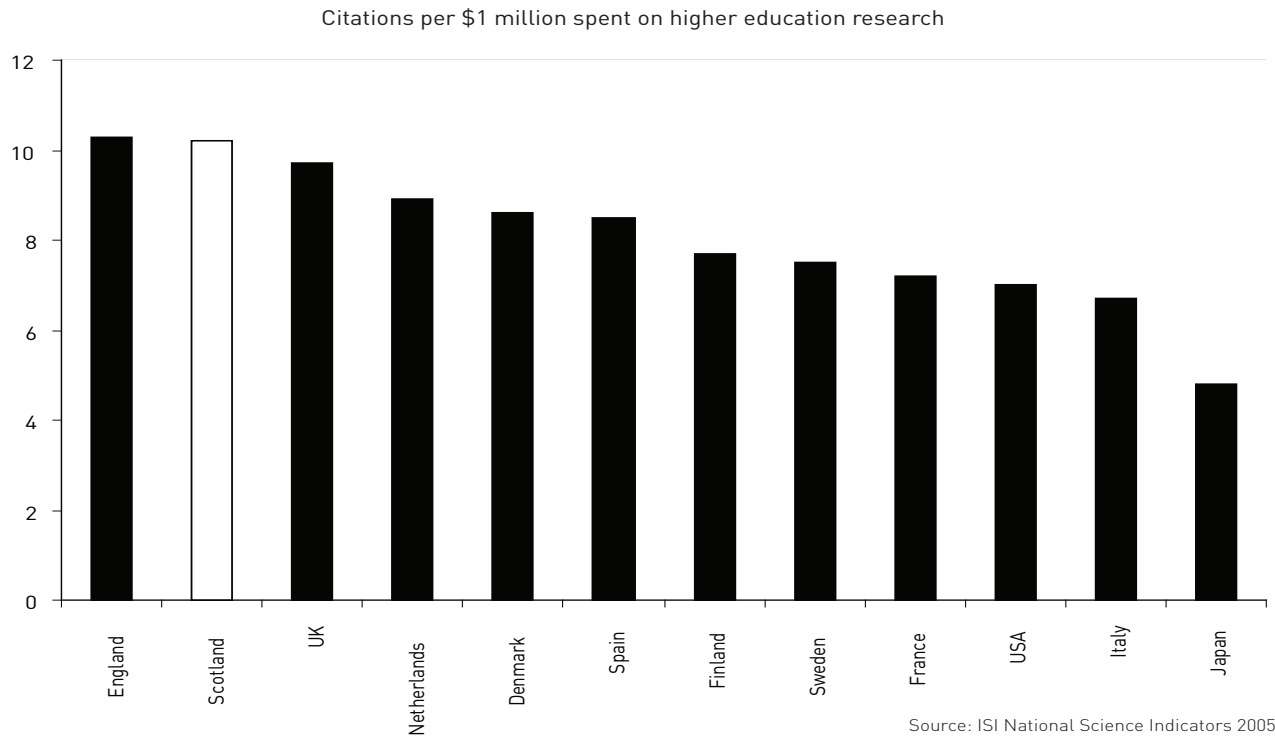
It is also important to assess how productive higher education has been when compared to other public services. The following graph has been produced using Office of National Statistics methodology to do that.



Looking at research, if we compare the number of academic papers produced per \$1 million spent on higher education research we can see that Scotland is particularly efficient.

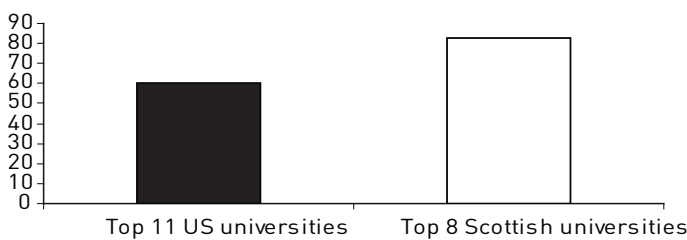


Scotland also compares well when we look at the number of citations produced per \$1 million. A citation is a measure of how influential a piece of research has been among the academic community and is therefore a good measure of quality.

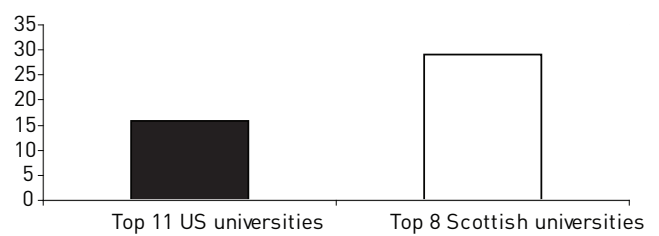


The final area we looked at is knowledge transfer. In this we compare ourselves with the world leaders, the USA. The following graphs show that, when it comes to producing spin-outs, licences, disclosures and patents Scotland gets more value per \$150 million invested than even the top US universities.

Number of disclosures per \$150 million sponsored research

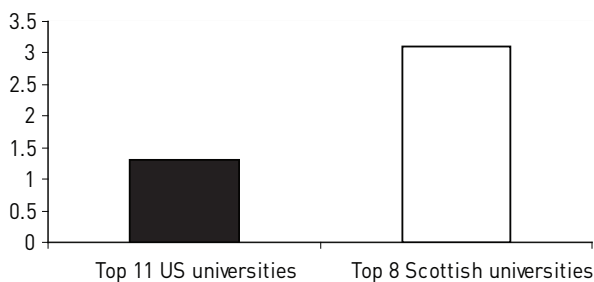


Number of licences per \$150 million sponsored

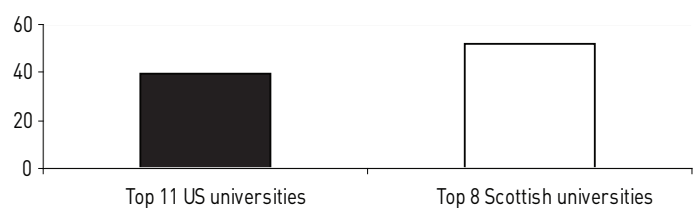


Source: University of Edinburgh

Number of spin-outs per \$150 million sponsored research



Number of patents per \$150 million sponsored research

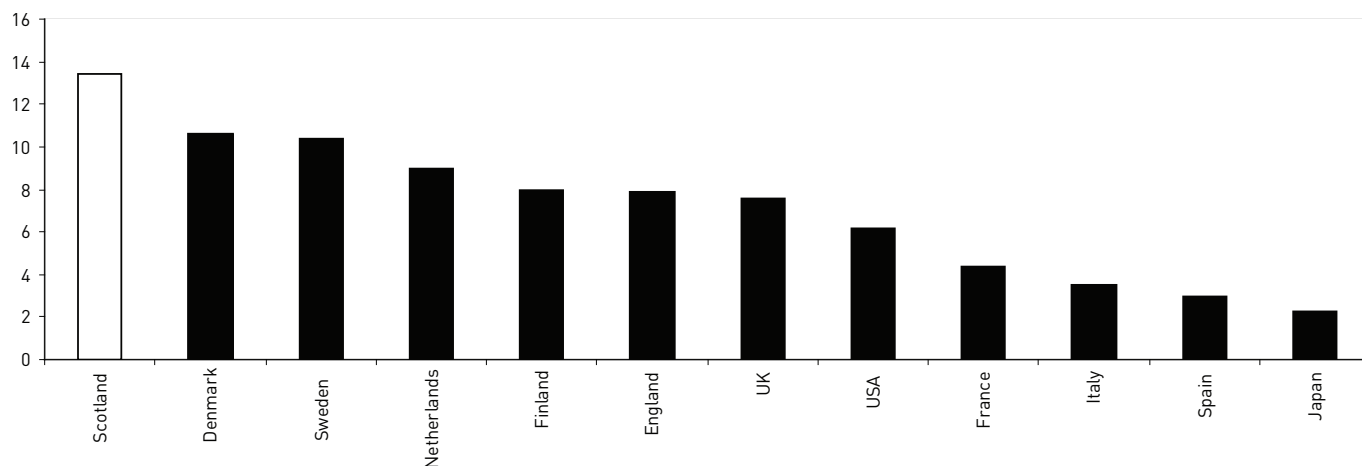


Source: University of Edinburgh

Effective use of public money

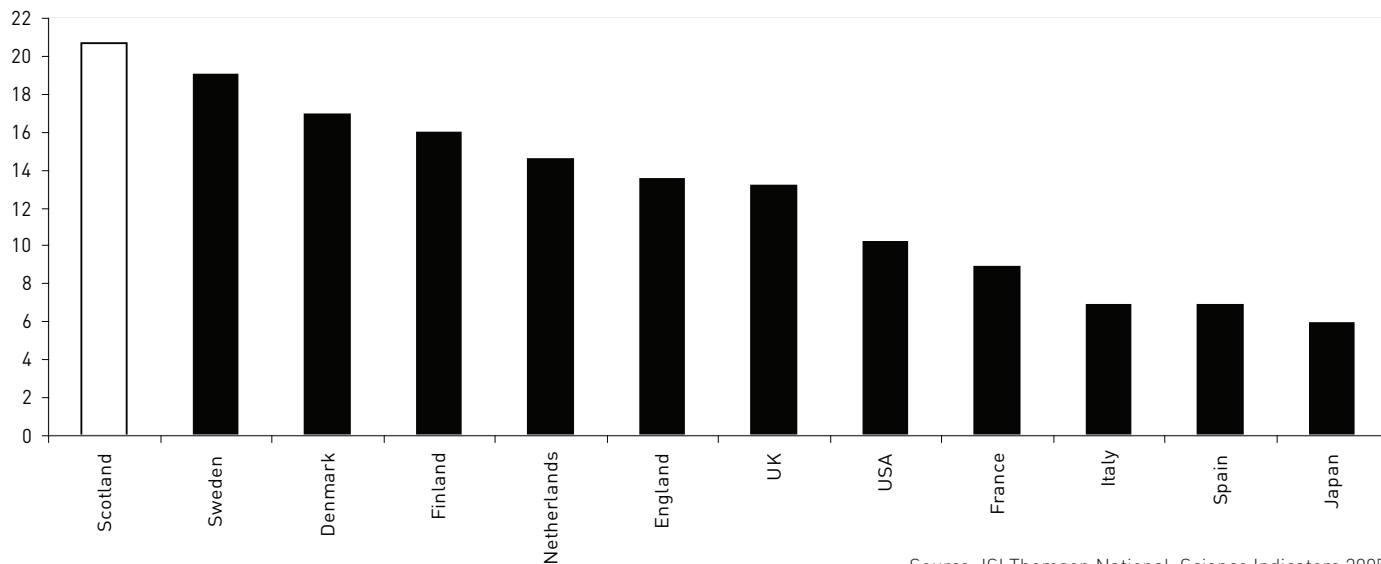
Similarly, our research would mean nothing if it was of poor quality. As can be seen from the graphs below, not only do we get good value for investment from Scottish research, we get high quality for our expenditure as well. It is useful to compare the number of academic papers produced with the size of the country and the number of citations. This illustrates that, as a nation, Scotland is remarkably productive in high-quality research.

Academic papers per 10,000 population



Source: ISI Thomson Science Indicators 2005

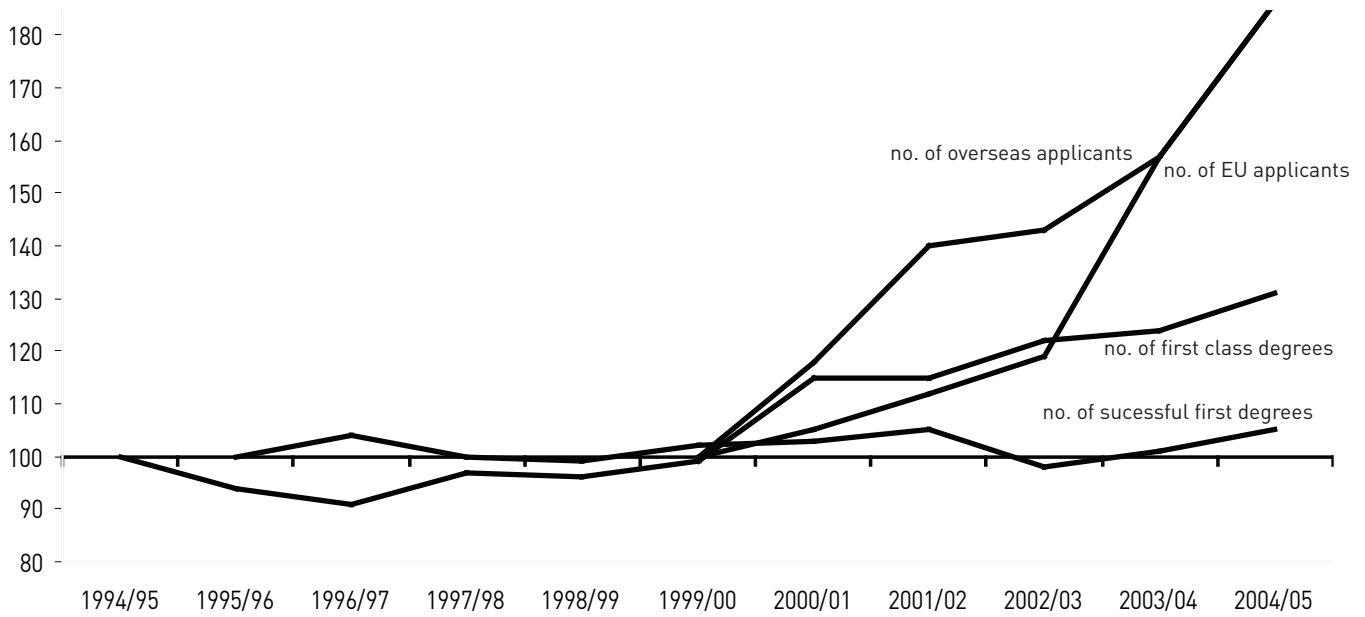
Citations of academic papers per 10,000 population



Source: ISI Thomson National Science Indicators 2005

Quality of teaching is also important. The next graph selects four measures of the performance of the higher education sector over 10 years which give an indication of teaching quality. Those are the number of overseas and EU students applying to study in Scotland, the number of first class degrees and the number of successful first degrees. As we can see, there has been a significant improvement in all four measures.

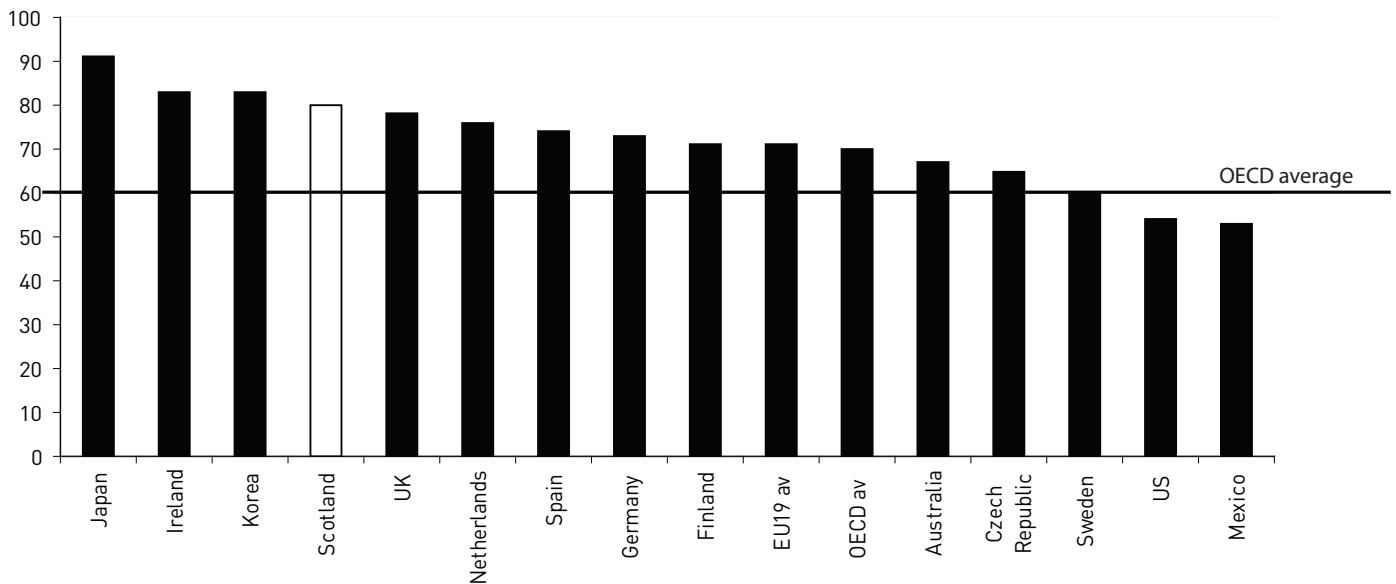
Quality measures of teaching in Scottish universities 1994-2005



Source: HESA and UCAS

The higher education sector in Scotland prides itself on the support and guidance provided to students throughout their time at university. The graph below illustrates that Scotland has one of the highest percentage rates of students completing their course throughout Europe and is well above the OECD average.

Percentage of higher education students that complete higher education courses in 2004



Source: OECD and Scottish Executive

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