

## **Demand for Graduates: A review of the economic evidence**

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1. This paper is concerned with the economic implications of expanding higher education, and is based on a review of recent research evidence about this topic. It is not concerned with the policy of expansion more generally; though it concludes in passing that there are strong reasons to expand higher education on the grounds of:

- a. social equity
- b. the social benefits arising from having a well-educated population
- c. increasing demand, especially from young people.

2. However, this report does not explore these questions in detail. Instead, it, examines the evidence surrounding the economic issues. In doing so it looks at the economic factors that will lead individuals increasingly to demand higher education, the evidence for an existing and future gap in high-level skills and, in order to ascertain whether increasing the number of graduates can drive economic growth, it finally examines the relationship between skills and productivity.

### **Increasing Demand from Individuals**

3. The first section of the paper examines the reasons why individuals are likely to continue to demand higher education. The Government has said that it is working towards a target that by 2010 the equivalent of 50 per cent of the under-30 population should experience higher education<sup>1</sup>. At the same time there is some recent evidence (HEPI (2003)) that after a number of years of stagnation, the proportion of young people taking A-levels has begun to pick up.

4. Whether this represents a trend is uncertain, but it does seem that there will potentially be strong growth in higher education demand, and that even without a Government target, increasing demand from young people means that an Initial Entry Rate (IER) of 50 per cent or so is quite possible by the end of the decade. In any case, there will be a strong increase in the number of 18-year-olds in the population, which itself will increase demand for higher education. In terms of the economic factors impacting demand for HE, the high average private rates of return continue to play a significant role in maintaining demand for HE from individuals. Research reports have shown that returns to HE have remained significant despite the increase in the number of graduates.

5. It is likely that there will be continuing strong demand for higher education as a result of the continuing reduction in alternative opportunities for non-graduates, and possibly the reduced value

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<sup>1</sup> Though the wording of the target has changed. In the 2003 White Paper "The future of higher education", the Government now talks about "increasing participation towards 50% of those aged 18-30 by the end of the decade".

of such alternative employment. Because the assumption is made by employers that graduates represent the top end of the population cohort in terms of skills and ability, the higher the participation rate, the fewer opportunities are made available to non-graduates. As the participation rate increases, it becomes rational for an increasing number of people to enter HE in order to ensure access to the jobs they wish to apply for.

6. To the extent that it is the reduced availability of suitable alternative employment for non-graduates that is driving demand, participation in higher education benefits the individual, but does not necessarily provide an additional dividend to the wider economy and society. It is also the case that the average private rate of return to a degree, the other economic driver of demand for HE, is recognised to be considerably higher than any estimate of the social rate of return. Given the uneven benefits to the individual and to society, this, then, raises questions about who should pay, and suggests strongly that the Government is right to seek to rebalance the costs from those who can afford to contribute through the mechanism of student fees.

7. Apart from any economic considerations, there are very strong non-economic arguments for increasing both investment and participation rates in HE. Firstly, as participation in HE continues to increase, and the opportunities for non-graduates continue to decrease, the strength of the social case for widening participation becomes increasingly compelling. Otherwise, social inequalities are likely to remain, and be reinforced. Realistically, participation is likely to widen only in a period of expansion of participation.

8. Secondly, there is ample research evidence of wider benefits to society arising from HE (such as health benefits and enhanced social cohesion through active citizenship) which provide good reasons for investing in HE. If higher education is considered as a social as well as an economic good, then it is clear to see the benefits of further increasing participation in higher education.

### **Evidence of a Skills Gap**

9. The second section looks at the demand for graduates from the labour market. Given that there may well be significant numbers of additional graduates entering the job market over the next decade -- representing a rising trend -- what sort of jobs will these graduates be going on to? Is there currently a shortage of high-level skills in the UK? If so, this could be preventing our businesses and therefore our economy from achieving their maximum potential, and it would suggest that growing graduate numbers could readily be accommodated in the economy.

10. National skills reports have identified that there is currently a skills gap in intermediate-level jobs (many of which now require a graduate qualification for entry<sup>2</sup>), which is likely to get worse. Of the jobs created over the next decade 80 percent will be in occupations that typically recruit graduates (including those with sub-degree qualifications) (DfES [2003a]). The "knowledge economy" of the future will require more highly skilled individuals.

11. This section of the paper examines the evidence surrounding existing and future high-level and intermediate-level skill gaps. Critical to this discussion is the definition of particular levels of

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<sup>2</sup> Therefore, arguably, require high-level skills.

skills and categories of job types. The definitions of such terms referred to in this paper are precisely defined in the glossary.

The present balance between supply and demand

12. The main finding is that there is no evidence of an existing overall high-level skills gap. Recent major research papers in this area have concluded that the supply of and demand for high-level qualifications is roughly balanced at present, although there are some specific high level skills gaps. On the other hand, there are reports of skills gaps within the jobs category labelled 'intermediate' which would fit with international comparisons that demonstrate the UK has a low intermediate level skills base in comparison with other OECD countries. Because an increasing number of graduates are being recruited at the 'intermediate' skills level, it does seem possible that an increased number of graduates — especially at the sub-degree level — might provide a solution to meeting this skills gap.

13. However, the intermediate job category is large and very diverse, and contains a wide range of jobs with very different skills needs. On closer inspection the higher level of the associate professional jobs in new, growing service-related sectors, which have the fastest penetration of graduates, do not identify skills gaps.

14. Although the market seems to be working reasonably well at the top end of the intermediate job category, the question of whether graduate skills are required to perform these jobs still remains. There is new evidence which demonstrates that in recent years, additional graduate numbers have mainly been absorbed into new graduate positions. The evidence suggests that these positions use less graduate skills and pay a lower graduate premium than traditional graduate occupations. It is possible that these new graduate occupations are making use of graduate-specific skills, but the evidence so far is inconclusive.

15. Ongoing research by Elias and Purcell is still exploring the extent to which 'new' graduate occupations are just a direct replacement of previous non-graduate occupations or genuinely new graduate roles in the labour market. If as projected, we produce more graduates than there are graduate jobs on current definitions, this will be a crucial question. This report does not consider this question further.

16. Within the category of intermediate-level jobs, the major skills gaps are reported within technical and skilled trade jobs mainly in construction and manufacturing and at other associate professional levels, mainly in health and social care (this is a very specific skills gap that is influenced by pay and conditions). The skills gaps at the technical and skilled trade levels are likely to continue owing to a very significant level of continuing replacement demand in declining industries, coupled with a disinclination on the part of young people to learn the specific vocational skills required to do these jobs.

17. Considering that new growth areas in the service industries require broader, generic, more flexible skills, it is possible to see how young people rationalise choosing broader qualifications rather than the specific vocational qualifications needed for declining industries. It will be a very hard task indeed to fill these skills gaps and it is not at all clear that higher education holds the

solution. The specific skills needed to meet the requirements of these industries are not the sort of skills provided by higher education.

The future balance

18. The major skills needs identified by the National Skills Task Force (NSTF) (basic skills, generic skills, intermediate-level skills<sup>3</sup>, specialist ICT skills, maths skills and the major adult skill gap) were substantial, but were not predominantly at the high skills level. In terms of future demand for high-level skills, the large number – around 2 million - of new jobs projected to 2010, which are reported to require graduate qualifications, is actually not any greater than the increasing demand for graduates that has existed since the 1980s. Moreover, trends suggest a deceleration in the pace of change.

19. On the present pattern of activity, the economy will continue to need a gradual increase in the number of graduates. However, this increase is of the same order as has occurred over the past decade. The graduate supply projected recently by the Institute for Employment Research – based on population growth, and *static participation rates* leading to increased stock of graduates in the workforce of 2.3 million by 2010 - has suggested a continuing balance between supply and demand to 2010. The increase in participation now projected will increase graduate supply further, but only slightly: at most it may add a further 100,000 graduates or so to the 2.3 million already projected. Bearing in mind the inherent uncertainties in projecting demand, the best estimate remains for a broad balance between supply and demand by the end of the decade.

### **The Relationship Between Skills, Productivity and Economic Growth**

20. Despite the evidence of a rough balance between graduate supply and demand, based on existing trends, there is a strong and widespread belief that an increasing number of graduates, and thereby an increase in the nation's human capital, will lead to increased productivity and therefore economic growth. New Growth Theories make the case that education policy can impact economic growth in a decisive way. The final section of this paper examines the theories and evidence regarding the relationship between high-level skills and productivity. It concludes that investment in higher education *in isolation of other factors* is not sufficient to drive economic growth. If the economy is to make best use of increasing graduate output, there is a lot that will need to change over and above the increasing skill levels in the workforce.

21. The key contention of New Growth Theories is that a more highly skilled worker is a more productive worker. The logic of the argument is then very appealing. An increase in skills produces an increase in productivity, which in turn produces an increase in GDP per head, thereby achieving the ultimate aim — economic growth.

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<sup>3</sup> Note that there is a difference between intermediate-level skills and intermediate-level jobs. While there are now some intermediate-level jobs that require graduate qualification for entry, intermediate-level skills still refer to the range of occupational skills traditionally thought to be needed to be effective in intermediate-level occupations. The NSTF identified a skills need for intermediate-level skills, not high-level skills for certain intermediate-level jobs.

22. Successive governments have produced white papers on education and competitiveness which emphasise skills, including high-level skills, as the crucial source of sustainable competitive advantage for the future. Nor is it only in this country that governments have embraced New Growth Theories -- whether explicitly, or implicitly by relying on expanding higher education in order to drive economic growth.

23. The limitations of New Growth Theories in relation to high-level skills are now well documented: although it is generally true that there is a correlation between investment in higher education and economic success, the direction of causality is not known. Similarly, there is no clear evidence that graduates add value simply by virtue of being graduates. They may, but this is unproven.

24. This is certainly not to say that universities have no role. On the contrary, they have been identified as key players in the progression of the economy to an innovation-driven stage, not only through the production of high quality, highly skilled graduates – although this is an essential role – but through the creation and commercialisation of new knowledge. Universities have become increasingly important to regional and national competitiveness through successful R&D involving business and universities co-operating throughout the innovation process. The continuing efforts being made to enhance and increase interaction between universities and private businesses will play a key role in developing our economy.

25. Even putting on one side the difficult question of the extent to which higher education may increase the potential productivity of graduates - skills and knowledge do not, in themselves, necessarily add value, unless and until they are combined with a number of other critical factors which ensure that they are being utilised in such a way that impacts productivity. Increased high-level skills are a necessary but not a sufficient condition to increase productivity. And, to the extent that increased skills would contribute to an increase in productivity and economic performance in the UK, a convincing case has been made by many researchers that the deficit is less likely to be the availability of high-level skills but more likely their utilisation by employers.

26. The advantages of a strategy for the UK economy based on high-technology, high-quality, high-skill and high value-added are clear to see. Indeed, in the face of competition from the newly emerging and rapidly developing economies, many believe that it is essential that we go down this path. However, it is not clear that UK businesses are adopting this strategy in preference to the many other strategies that are available to them.

27. For businesses, there is no single route to competitive advantage, through "upskilling." A wide debate is required about how to encourage companies to choose a high-skill, high-reward strategy. Although this vision for our economy will require an increasing number of highly skilled workers if it is to succeed, it will not be driven just by increasing the number of graduates entering the labour market, in isolation of other factors. Recent research publications by the DfES, Treasury, and DTI show a welcome recognition of the factors that need to be brought into play in order to achieve the Government's economic strategy. Low levels of total factor productivity (reflecting low levels of innovation and less effective use of technology) and capital intensity have been identified as the key issues in this country - above labour force skills.

28. It is encouraging that the policy focus on skills is becoming wider. Only by taking this broader view will we be able to "reach a proper understanding of the inter-relationship between skills, knowledge and organisational performance and to devise policies that could help move the UK towards becoming a high-wage, high-skills, high-productivity economy" (Keep and Mayhew [1998]). The stubbornly low demand for high-level skills and their utilisation in the UK needs to be given equal focus to the supply of high-level skills.

29. This analysis poses the question whether overall economic policy, and the associated transition to a high value-added economy throughout industry and commerce, is matching the Government's commitment to the expansion of higher education. It seems clear that the availability of high level skills is a necessary but not a sufficient condition to improve our productivity and economic performance. What is also clear is that if the increasing graduate output sought by the Government and predicted in the most recent projections is not to lead to wasted resources and disappointed expectations, it is absolutely essential that low levels of total factor productivity and capital intensity are addressed, so that high level skills are utilised effectively in a way that impacts productivity.