The Effect of Sources of Funding on the Career Decisions of Individuals and the Eventual Effect on the Market for Highly Qualified Labour.

Under the current government, student numbers are the highest recorded[1]. At the same time, the cost to students of studying past further education level are rising, as the government is starting to follow a plan similar to that described in the title. Economic theory suggests that this is wrong, and it is important to look at what theory can explain and where it has shortcomings.

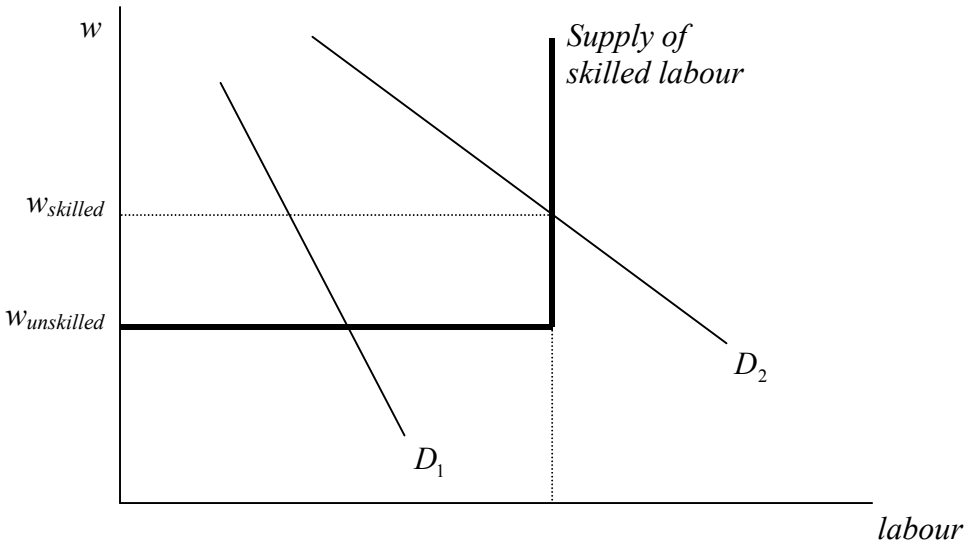
A simple model of the labour market assumes that labour is homogeneous, and thus earns a constant certain amount. This wage will only vary between workers if the work they do varies, or if more is demanded of them. While job satisfaction and desirability are important aspects in determining wages, they are largely irrelevant for this essay, and to simplify the model at first they shall be held constant over all jobs.

If we look at the least general case of skilled and unskilled labour, in which the only skills are those inherited at birth, we can see that the market for labour will exist in one of two possible states: one in which all labour in the market follows unskilled occupations; one in which those with the inherited skill all follow the skilled occupation and all those without remain in unskilled work. The differentiating factor between these two scenarios will be the wage rate for skilled work compared to that for unskilled labour. If the wage rate for skilled labour is the higher, the second possible outcome occurs.

In the diagram below, the labour supply for skilled labour is shown by the thick black line. It is derived by the use of two individual factors, which explain its kinked shape. The vertical section originates from the absolute supply of skilled labour, which we have defined to be fixed; thus, at any wage, the possible supply of labour will be the same. Below the current unskilled wage, however, it is not worthwhile for labour to

[1] Note that this was written in February 1997. Following this, the government abolished the student grant and moved to a system of loans. The number of students has fallen slightly since.

take skilled jobs when they could be earning a higher wage in unskilled occupations. The horizontal section is, therefore, at the level of the current unskilled wage.



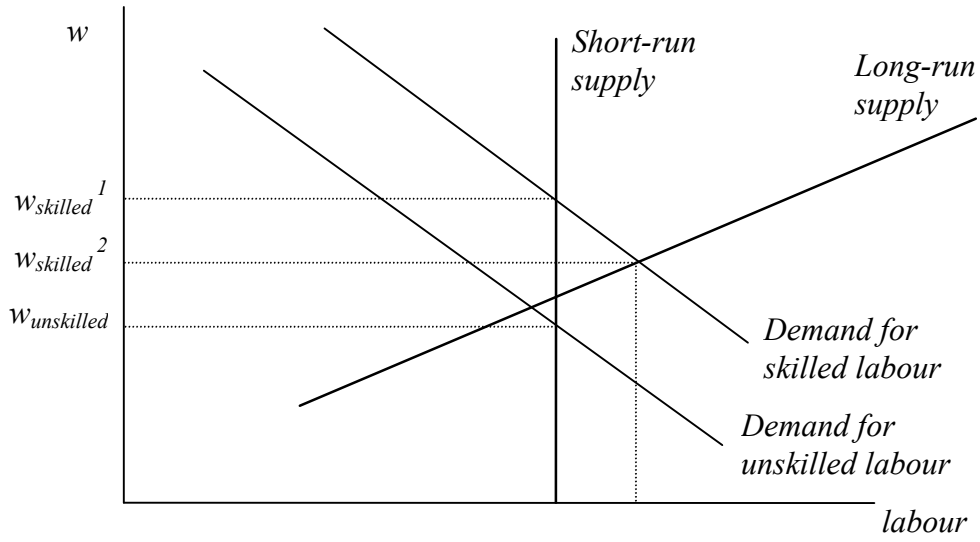
At a higher demand level (D_2), wages for skilled labour are higher than those for their unskilled counterparts, due to the restricted supply. Unskilled workers will want to move into the skilled market, but are unable to due to their lack of ability.

The higher demand level is only likely to occur if the skills under consideration will increase the productivity of workers. The added benefit of employing an athlete in an office environment over any other labour will be minimal, if any exists at all.

In real life, however, there are very few occupations which only demand special skills which people are born with. Skills are far more likely to be gained from education and training, and this is largely available to the population as a whole. The analysis so far discussed still remains relevant for acquired skills, but only in the short term, as it will take time for new graduates to be trained.

Again, it must be assumed that skills gained through education add to the productivity of the labour force, and so will command a higher wage for any labour which has achieved certain levels (arising from a higher productivity level, and thus a shifted

demand curve). This high wage will act as a signal for new labour to enter the market, and in the long term the supply of labour will be dependant on the wage level:



We shall, therefore, assume that we are constantly working in the long term, as short term analysis will always lead to the first model discussed.

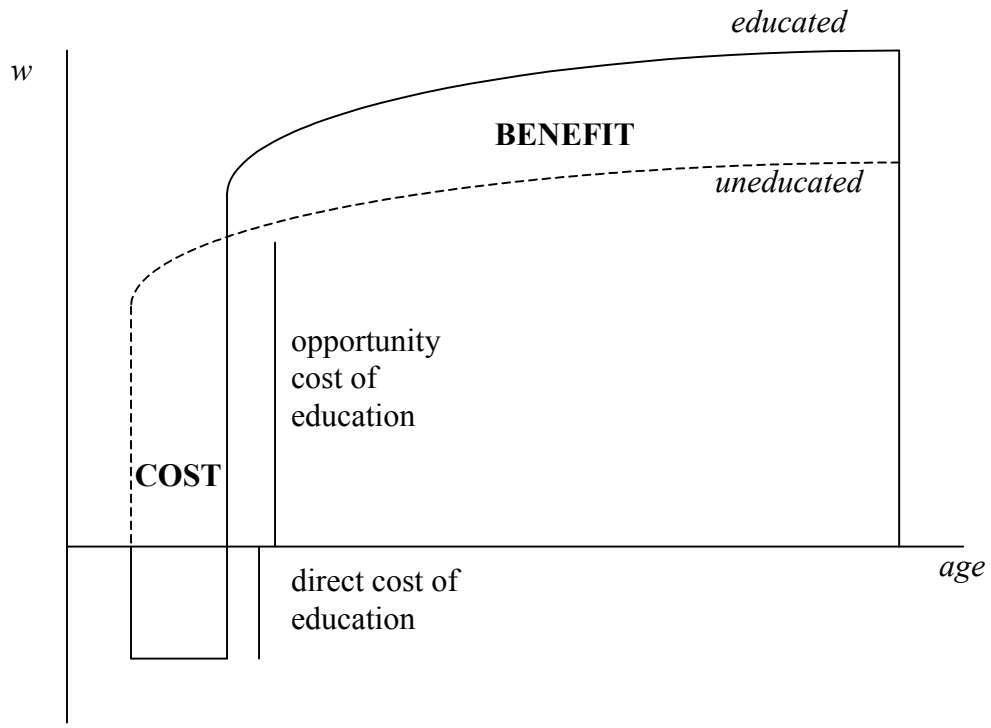
It can be observed that the long-run equilibrium wage for skilled labour ($w_{skilled}^{2}$) is still higher than the wage for unskilled labour. If it is assumed that labour is indifferent between the jobs in terms of non-monetary terms, this should not be the case; this higher wage must be compensation for some element of the model not yet discussed.

As yet we have not mentioned the fact that training and education costs money. If the necessary education were free, the long run supply curve would be the same as the curve initially discussed, where the whole labour market would aim for the higher wage, and have to pay nothing to get it.

The total cost of training to an individual can be estimated to be the cost of resources used in the training itself, and the opportunity cost of lost wages over the period of training. Whether to invest in training will depend on the benefit gained over and above this cost.

Before embarking on a detailed analysis of how the rate of return will affect and be affected by the cost of training, we must make a few initial assumptions in order to clarify the model. These assumptions may be revised afterwards with minimal change to the theory. It is assumed that students can borrow without interest, and, at least initially, must pay for the full cost of their education. It is assumed that there is always full equilibrium and no uncertainty in the labour market, that all individuals act the same, and that jobs are chosen for monetary wages only. We will also assume no inflation, although this can easily be compensated for by using real wages and assuming that these adjust fully in line with inflation.

It is possible now to show, on a diagram, how individuals will choose their occupation:



Those leaving school and not progressing to higher education will start work immediately following the lower wage path – their wage schedule is shown by the dashed line, and their total lifetime earnings are shown by the area under this curve.

It is the other, higher, wage path that this essay is most concerned with. Initially, anyone following this path will have to pay for their education. The sum involved is represented by the area marked **COST** in the diagram above; the area above the age-axis shows the amount of wages the student could earn during their three or four years at university, while the area below the axis shows the direct cost – that is, the amount the student pays for education, minus any benefits such as socialising, that would otherwise not be available. After the student leaves study and gets a job, the extra wage earned will lead to an additional monetary benefit over that earned by the non-graduate.

If we are in equilibrium, and if both skilled and unskilled labour is demanded, then it is easy to derive that the benefit gained here must equal the cost put in initially. If benefit was greater than cost, more workers would enter education, while if cost was the greater, student numbers would fall. Using this model, lifetime incomes are equal, if the enjoyment of student life is taken into account.

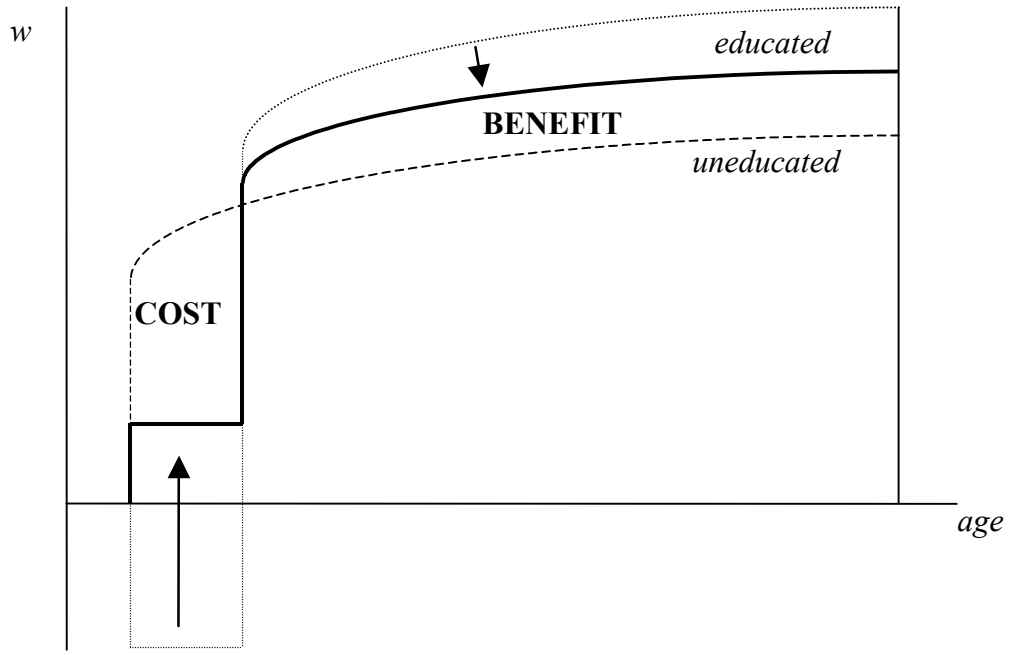
We may also now lessen the restrictions created by the assumptions we originally made. The workforce is not homogenous, and this is reflected in the wages paid; the monetary wage may alter between identical jobs, because workers may enjoy or dislike jobs to varying degrees. It is more important to look at total benefit to the worker, including both monetary and non-monetary elements.

We may also look at interest rates. If a student must borrow money to study, they will have to pay it back at a later date. If interest rates are positive, the student will have to earn more over their working lifetime to offset the increase in the amount they must pay back. Assuming equilibrium, the student will only be willing to go into education if the return they will get on their education is equal to the return they could get on other investments.

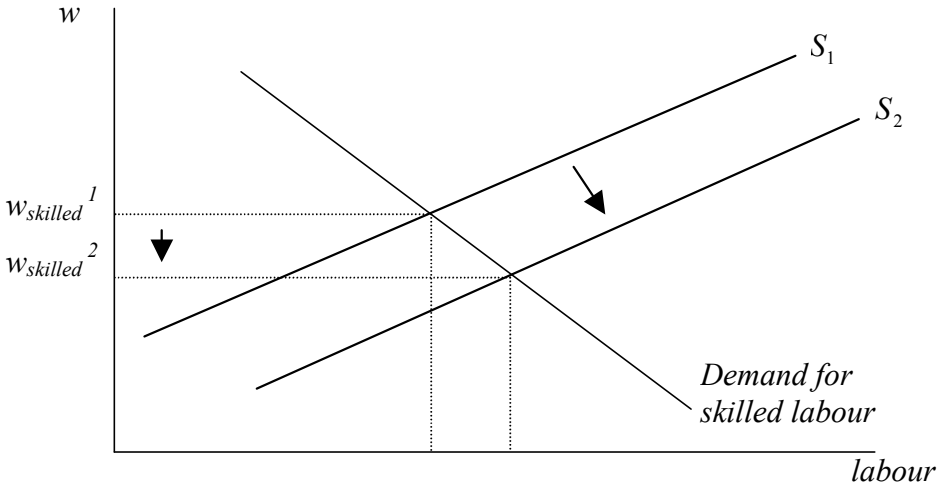
It is only now that we have put forward enough theory to examine how a system of grants or loans will affect the market for skilled labour. Governments are likely to support education for several reasons, the most important being the existence of

imperfect capital markets; it is rarely easy for a young person to borrow sufficient money to fund a higher education course, which would restrict access to education, creating economic rent in the market for skilled labour.

The starting point of this economy, we assume, is with a system under which all living and tuition costs are paid. If we take these out of the model described above, we will see that, although there is still some 'cost' to students (as in money that is not earned because they are not working – it is reasonable to assume that wages are above basic living-cost level), it is not as much as before. Assuming the labour market is in equilibrium, we then deduce that the benefit gained from education must be lower. It is very unlikely that graduates will retire earlier, and so we find that wage levels for skilled labour fall:



Again, the area labelled **COST** is equal to the area labelled **BENEFIT**. The benefit is so much smaller here because of a greater supply of skilled labour; after all, the cost of education is small, and so workers have less to lose by taking an academic course. Simple demand and supply forces in the labour market lead to a fall in the average wage, as can be seen in the diagram below:



As the wage falls, the education option becomes less and less attractive, and so an equilibrium will be reached.

Now, if the government introduces a system of guaranteed loans, the relative cost to the individual of attending university will rise. It should be noted here that the fact that the loans are *guaranteed* acts to ensure that nobody is excluded from going to university for purely financial reasons; everybody will be able to borrow the necessary money and pay it back at a fixed price. In the short term, the number of people going to university will remain constant, and the number of graduates will not fall. As people realise that the costs of going to university outweigh the benefits gained over their lifetime, they will decide not to go into higher education, and the amount of graduates will fall. From the same supply and demand analysis utilised before, it can be observed that a fall in supply of skilled labour leads to a rise in the wage for such work, and this wage increases the benefit for those who do decided to take a degree. In equilibrium, a situation similar to that initially discussed (where students fund themselves) will occur.

Career choices of individuals will be largely unaffected: that is, those who would attend university under both systems of funding will continue to look for the same jobs; it is only those *marginal* individuals who will not study without grants that will be affected, and these individuals will now search for unskilled work. It should be

noted that graduates will initially apply for any highly paid jobs in order to reduce their debts, and therefore other jobs demanding skilled labour will have to eventually raise their wage rates to attract any workers at all.

It should be noted that the education gained through university is not necessarily uniformly increasing the productivity of workers. If this were strictly true, very few students would read History of Art, Latin or Theology, as these (for example) have very few direct applications in the marketplace. Instead it can be assumed that university attendance is a method of screening used by firms; only the most clever or hard-working (and therefore the most productive) will last through the course, and so are more attractive to employers. There will be some effect caused by transferable skills, but these will be applied to graduates only, and will only reinforce the employers' division of desires.

The current government has been steadily reducing the level of grants over the past ten years, replacing them with student loans (a type of guaranteed loan, which is paid off over a fixed period after commencing work). Theoretically, there should be a large reduction in student numbers because of this. This has not so far been the case – as already mentioned the current student population is the highest recorded. It can be concluded that theory is omitting some important details, which must be examined before the reasons for Britain's expanding student population can be understood.

The first, and possibly most important item that the theory has overlooked is that of unemployment. At times of high unemployment, individuals are more likely to go into higher education, as it is less likely they will find a job on leaving school. This uncertainty effectively lowers the wage-path for unskilled labour, increasing the benefits of attending university. In the long term the increase in students will lead to lower wages in all jobs, and the possibility of decreased unemployment. In Britain at present unemployment is decreasing (despite what the media claims, and even taking into account the alteration of the definition of unemployment), but student numbers are still rising. This point does contribute to the theory in a large way, however; it is,

we may deduce, *expectations* of unemployment which are important, and John Major himself admits that the 'feelgood' factor has not yet returned to the British economy.

It is also important to look at increased factor mobility over the last three decades. In the 1950s, it was relatively unusual for individuals to move away from their place of birth. Choosing careers was a risky decision, as unemployment in one industry could virtually invalidate certain types of education. In the late 1990s, however, it is almost certain that individuals will be able to find suitable occupations. It is far more normal for graduates to move from their place of origin, and with the advent of teleworking, individuals can even be employed by overseas firms with little inconvenience to themselves.

The tax system at the moment in Britain is also relatively favourable towards students. The highest paid jobs are not taxed highly (the highest rate of income tax being 40%), while low paid occupations, while not in themselves heavily taxed, are proportionately worse off. Again, this will alter the amount of benefit gained by graduates, and in the long term equilibrium will again lead to a relatively fair wage.

Finally, it must be mentioned that student life has become generally more amiable in recent years. Many students see university as a way of delaying their entry into the world of work, and parents are more likely to pay for their children's education; both of these reduce the costs of education to individuals in the general analysis.

It can be concluded, therefore, in reply to the initial question asked in this essay's title, that a switch to a loans-based system of funding from a grant-based one should, theoretically, decrease the number of individuals going through university, and raise wages for those jobs requiring graduates. However, this theory does not strictly match current observations in Britain.

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