Does Higher Education System of United Kingdom Produce Enough Graduates?

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Abstract

In this discourse the researcher tried to make the readers view the three-dimensional image of the productivity and contribution of higher education of United Kingdom, quantitatively as well as qualitatively, through the prism of comparison with that of USA and France. The researcher presented information regarding population, economic status, graduate enrolment and entrance trend of the higher education students in the United Kingdom. And at the end the researcher gave the data depicting the impact of higher education on the UK economy. Although, UK comes to the second place (after the USA, a giant in knowledge and economy) in the world, yet the competing situation in France could not be overlooked. The researcher thinks it will make the reader able to have, not only, some knowledge of the higher education system but also the relationship of higher education and labour market. It will also help the reader to dig out into the efficacy and efficiency of the system with regards to the economic development of the state.

1. Introduction

Present discourse addresses the question "is the UK system of higher education efficient enough in the production (quantitatively as well as qualitatively) of higher education graduates. The question assumes three-dimensional configuration. Firstly, present number of students in UK could be compared to that of during the preceding years. Secondly, what is the volume of UK graduates enrolment with respect to that of other European countries as well as USA? Thirdly, what is the economic impact of higher education on UK, which is a novel aspect to be viewed? The first two are projecting the quantitative nature whereas the third one is contributing simultaneously to both quantitative as well as qualitative disposition of the question. The question is, undoubtedly, quite perplexing. It will be interesting to confront with such a multifaceted thing of varied aspects, (but) as a monolithic whole. The writer intends to extend the discourse with the following dimensions in focus:

- Population of the United Kingdom
- Economic status of the United Kingdom
- Graduate enrolment and entrance trend in the United Kingdom
- European (with special reference to France) and global image of the United Kingdom

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- Economic impact of higher education in the United Kingdom

Leitch (2006) remarked that "In the 19th century the UK had the natural resources, the labour force and the inspiration to lead the world into the Industrial Revolution … In the 21st century, our natural resource is our people". The report (Leitch, 2006) further adds that the strong economies of the world are confronting with a different type of revolution. This new form of revolution could be characterised with the increasingly greater interest of the economists in education. This nascent notion of revolution is affirmed through a good number of publications with a globally convergent interest in the same area only during the previous decade. Heijke and Meng (2006) said: "In recent years, the internationalisation of economic life is being reflected more and more in the internationalisation of education". Loo and Semeijn (2001) had already noted this transition. According to them rather new one as the knowledge economy has replaced the classical approach of economic development, which was based on the industry, trade and commerce. In order to avoid the prolixity of the discourse some of the documents depicting international interest in this direction are mentioned here. One may consult them for details: *A Nation at Risk: The Imperative for Educational Reform* from the US National Commission on Excellence in Education (1983), the EC White Paper *Teaching and Learning: Towards the Learning Society* (European Commission, 1995), *Skills for All: Proposals for a National Skills Agenda*, from the British National Skill Task Force (2000), and the World Bank's *Lifelong Learning in the Global Knowledge Economy: Challenges for Developing Countries* (World Bank, 2002). Heijke and Meng (2006) quoted Hövels (2003): "the increasing importance of knowledge in society and economy, and the implied shift from the importance of a classical scientific knowledge structure in disciplines towards specific contextualized knowledge stimulate larger interactions between learning in the classroom and economic life". With the dawn of the 21st century economic strength of the society is swiftly started being reinforced by the education in general and higher education in particular. With this background, a brief critical review of literature is given in the ensuing paragraphs.

Before going into the details of the discourse it seems me suitable, first, to look at the title, (expertly) designed and assigned by the professors. Of course, the title of this article is multifaceted in design and comprehensive in disposition. I think it is intended to make the students able to have, not only, some knowledge of the higher education system but also the relationship of higher education and labour market. It may help students to dig out into the efficacy and efficiency of the system with regards to the economic development of the state.

The word "enough" in the title of this paper is very cleverly used. It does signify the number of the graduates or more precisely the proportion of the graduates. Beside its quantitative aspect, it could be taken as pointing to the quality of the (higher) education; whether the graduates are equipped enough for their prospective professions or not! To me the title of the paper reflects the dual nature (as light to the physicist).

2. Population of the United Kingdom

The Census of Population in the United Kingdom (UK) is carried out once in every ten years. The most recent census was held on 29 April 2001.

Table 1: Mid-year (mid-2005) Population Estimates

	Population	Percentage of total UK population
England	50,431,700	*83.8*
Wales	2,958,600	*4.9*
Scotland	5,094,800	*8.5*
Northern Ireland	1,724,400	*2.9*
United Kingdom	60,209,500	

Sources: Mid-year population estimates: Office for National Statistics, General Register Office for Scotland and Northern Ireland Statistics and Research Agency. (Figures in the table may not add exactly due to rounding.). Published on 24 August 2006 at 9:30 am

The Office for National Statistics provides mid-year estimates continuously during the period from one census to the next. According to these estimates in the UK the population has grown due to natural change. Since the late 1990s net international migration into the UK from abroad has also been an increasingly important factor in population change. The mid-2005 population of the constituent countries of the UK is estimated as follows (http://www.statistics.gov.uk; accessed on 08.03.2007).

Statistics (from the office for National Statistics) evidenced that the UK population has increased by 7.7% since 1971, from 55.9 million to more than 60 million (mid-2005). The annual growth rate has increased from 0.3% (between mid-1991 and mid-2004) to 0.5% (mid-2005). It does signify that the population of the UK is increasing with an increasingly growing rate since ever.

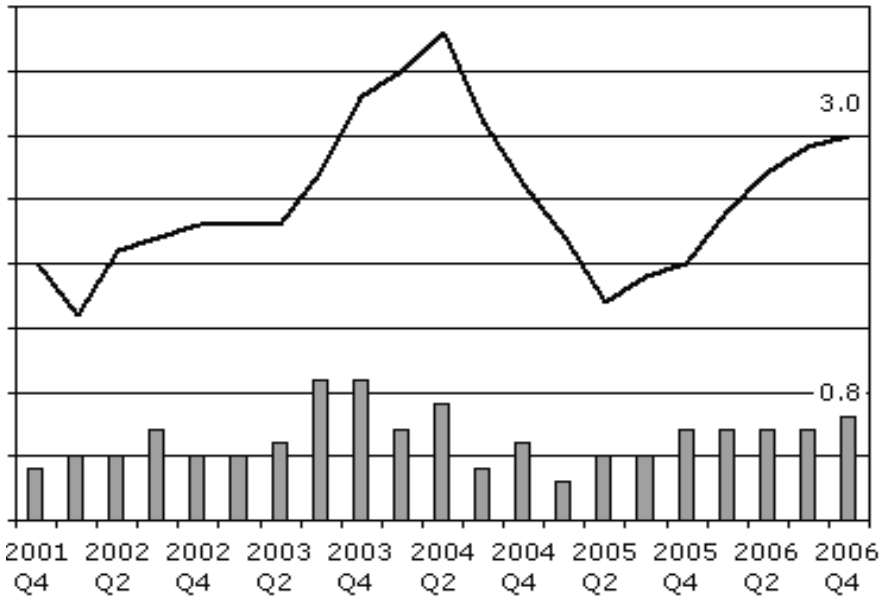
3. Economic Status of the United Kingdom

Leitch (2006) said, "The best form of welfare is to ensure that people can adapt to change". Let us have a brief look on the economic position of the kingdom through the Leitch report (2006). This report mentioned: "The UK is in a strong economic position. Economic growth is unbroken for 14 years, the longest period of economic expansion on record. The UK's employment rate is one of the highest in the G7 (Group of Seven: seven industrialized nations of the world, formed in 1976 when Canada joined the Group of Six (United States of America, France, Germany, Italy, Japan, United Kingdom); later became the G8 when Russia joined the Group of seven. Together, the eight countries represent about 65 percent of the world economy. (Source: Wikipedia, the free online encyclopaedia; accessed on 27.02.2007)) with 2 million more people employed now [by 2006] than in 1997".

Professor Ivor Crewe, Universities UK President (2003-2005) was satisfied to mention in his presidential address in the *Universities UK Annual residential conference* held in September 2004 at Keble College, Oxford (http://www.universitiesuk.ac.uk/speeches/show.asp?sp=66, accessed on 27.02.2007) that "The British Council and UK Trade and Industry conservatively estimate that higher education generates about £4bn in foreign earnings annually, which could triple by 2020". He further expressed his strong conviction, "we want to contribute more to the economy", which echoes the re-orientation of the UK education system.

3.1 Gross Domestic Product

Gross Domestic Product (GDP) is an immediate parameter to observe the economic strength of a state.



Real GDP quarterly growth in UK

(Source: http://www.statistics.gov.uk; accessed on 08.03.2007)

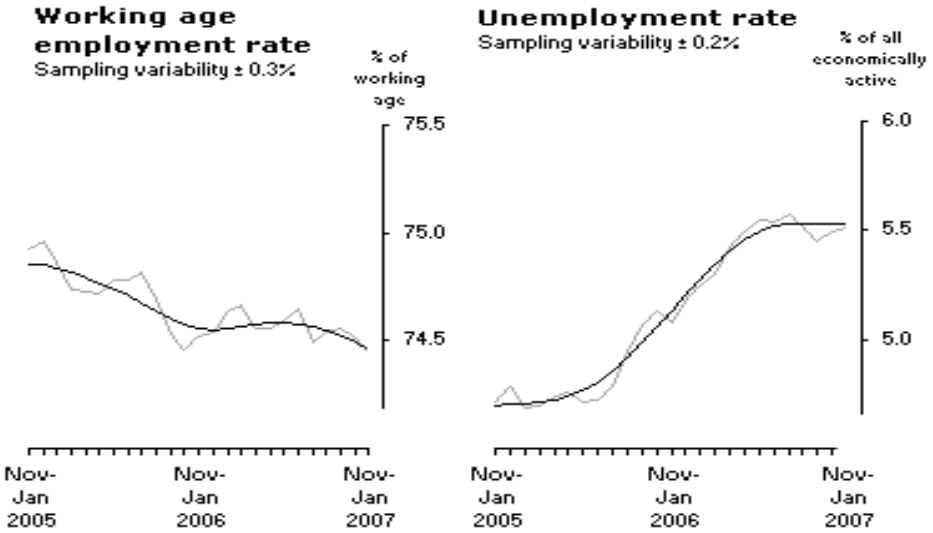
Figure 1: Growth in UK's Gross Domestic Product (GDP)

If we look ate Figure 1 (http://www.statistics.gov.uk; accessed on 08.03.2007), which reveals that UK's GDP grew by 0.8 per cent in the fourth quarter of 2006. It remained static (at 0.7 per cent) in each of the previous four quarters. The level of GDP in the fourth quarter of 2006 was found to be 3.0 per cent higher than that of the same quarter in 2005. For the year 2006 as a whole GDP rose by 2.7 per cent over 2005. Leitch report (2006) claimed, "Today the service sector accounts for three quarters of the UK economy. Almost 29 million people are employed in the UK. Of these, 3 million are self employed. Small firms with less than 50 employees, excluding the self employed, account for around one quarter of employment, with large firms accounting for just less than one half. The public sector contains more than 20 per cent of total employment."

3.2 Employment and Unemployment Rates

The employment rate (Office for National Statistics: http://www.statistics.gov.uk/; accessed on 27.02.2007) for people of working age was 74.4 per cent for the three months ending in January 2007, which is decreased by 0.1 percent from the previous quarter on the same year. The number of people in employment for the three months ending in January 2007 was 29.02 million, up 18,000 over the quarter and up 221,000 over the year. The quarterly increase in employment is largely due to more men in full-time employment. Total hours worked per week were 929.6 million, up 3.4 million over the quarter and up 4.5 million over the year. The number of jobs increased by 88,000 over the quarter and by 306,000 over the year to reach 31.58 million in December 2006, the highest figure since comparable records began in 1959.

The unemployment rate (Office for National Statistics: http://www.statistics.gov.uk/; accessed on 27.02.2007) was 5.5 per cent, unchanged on the quarter but up 0.4 over the year. The number of unemployed people decreased by 3,000 over the quarter but increased by 151,000 over the year, to reach 1.69 million. The employment and unemployment rates over the period of time are very clear in Figure 2.



(Source: Office for National Statistics: http://www.statistics.gov.uk/; accessed on 27.02.2007)

Figure 2: Rates of Employment and Unemployment

4. Graduate Enrolment And Entrance Trend In The United Kingdom

After having the view of the population and the economic situation of the UK the discourse in the following pages will be extended in the direction of the enrolment of the graduates and their trend in different fields of studies.

4.1 Enrolment in the UK's Higher Education Institutions

According to BBC News (http://news.bbc.co.uk/1/hi/education/6360327.stm; 27.02.2007) the number of students applying to UK universities has increased by 6.4% (371,683 students applied for UK university courses in 2006 and 395,307 in 2007) and the number of students applying to English

universities has risen by 7.2%. The number of overseas applicants (including European students) increased by 10.9% from 41,163 (2006) to 45,644 (2007). An increase of 33.9% in applicants from new European Union countries (with a 200% rise in applications from Romania and a 184% rise from Bulgaria) was reportedly a startling fact. This is in spite of annual tuition fees rising to £3,000 from September 2006 in England and Northern Ireland; and to Scottish institutions number of applicants increased by 1.9%. There was only 0.1% decrease in the applications to Welsh institutions. These figures were reported by BBC News from the university course admissions service (Ucas).

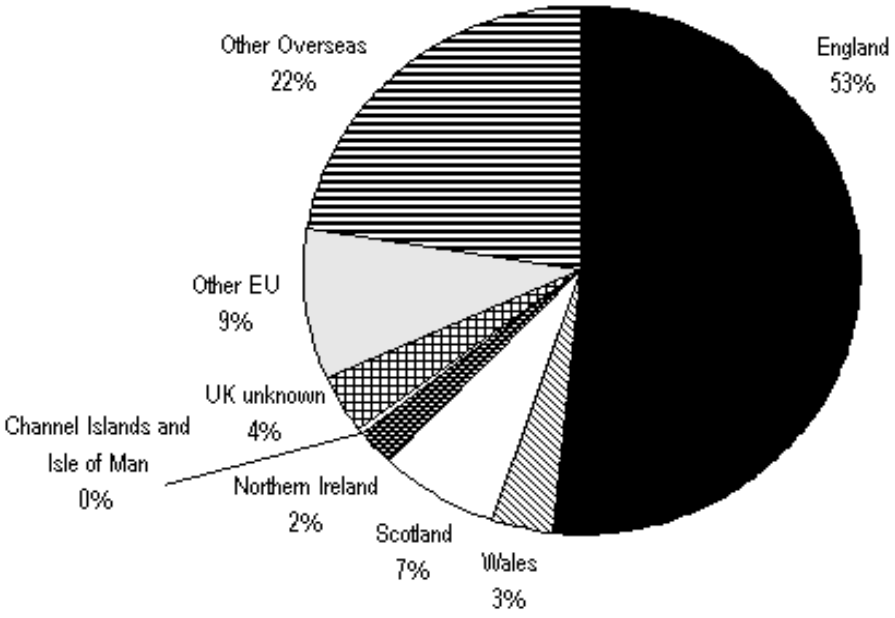
Table 2 shows the volume of the graduates from different origins enrolled in the higher education institutions of the UK during the late 90s.

Table 2: Percentage of Higher Education Students in the UK

Serial No.	Origin	Percentage of Higher Education Students
1.	England	53
2.	Wales	3
3.	Scotland	7
4.	Northern Ireland	2
5.	Overseas	22
6.	Europe (other than UK)	9
7.	Unknown	4

(Source: based on the data from HESA; http://www.hesa.ac.uk; accessed on 15.03.2007)

Previously, Crewe (2004) mentioned (http://www.universitiesuk.ac.uk/speeches/show.asp?sp=66, accessed on 27.02.2007) that UK universities gave very apt response to Prime Minister's initiative of 50,000 additional student enrolments by 2005. He said that between 1997/8 to 2002/3 the number of non-EU international students at UK universities increased (by almost 60%) from 117,000 to 185,000. More than 200,000 students are getting UK education off-shore through e-based learning. Figure 3 is the graphical representation of the Table 2.



(Source: based on the data from HESA; http://www.hesa.ac.uk; accessed on 15.03.2007)

Figure 3: Percentage of Higher Education Students in the UK

Higher Education Statistics Agency (http://www.hesa.ac.uk; accessed on 15.03.2007) stated that in 1991, over 46 percent of the graduate students in British institutions were from overseas. The large

increase in overseas full-time graduate students, both in absolute numbers and in comparison with UK students, is shown in the following Table 3.

Table 3: Number of UK Students and Overseas Students the UK

Year	Total students in postgraduate program	Number of U.K. students	Number of overseas students	Overseas students as percentage of total
1981-82	34,276	20,941	13,335	38.9
1982-83	33,903	20,610	13,293	39.2
1983-84	35,928	21,582	14,346	39.9
1984-85	37,563	22,377	15,186	40.4
1985-86	40,498	23,384	17,114	42.3
1986-87	42,824	24,144	18,680	43.6
1987-88	43,733	23,465	19,268	44.1
1988-89	44,175	23,899	20,276	45.9
1989-90	45,644	24,247	21,397	46.9
1990-91	49,950	26,537	23,413	46.9

SOURCE: Office for Science and Technology (OST). Annual Review of Postgraduate Awards. Unpublished.

(Source: based on the data from HESA; http://www.hesa.ac.uk; accessed on 15.03.2007)

In the 1990s, the relative number of all overseas full-time postgraduate students decreased. British postgraduate education, however, remained an attractive destination for European Union (EU) students. In 1994, 9 percent of full-time postgraduate students were from non-British EU countries (Figure 3). This was mainly because students from EU countries were eligible for tuition fees at UKrates. In four subject areas, overseas students even outnumbered British students: veterinary science, agriculture and related studies, business and financial studies, and engineering and technology.

5. Entrance Trend of the Graduates in Different Fields of Study

In the Table 4 one may readily note that the graduates are more interested in the market oriented education. Among traditional courses highest increased percentage is observed among Civil Engineering, Economics and Physics with percentage increase of 13.00, 12.80 and 12.20 respectively. Some of them like Archaeology and Astronomy had to face remarkable decline intake of the higher education students i.e. (10.00% and 17.00% respectively) (http://news.bbc.co.uk/1/hi/education/6360327.stm; accessed on 27.02.2007).

Martin Birchall (http://www.ft.com, 27.02.2007), managing director of High Fliers, which has been conducting research into graduate recruitment since 1995, surveyed 100 biggest graduate employers in January 2006 and alarmed: "The rise in the number of university students means graduates seeking top jobs this year are likely to be disappointed despite a 10.80 per cent increase in vacancies".

The Socrates and other EU student exchange programmes are the main cause of this increase. British Council and Universities UK report, *Vision 2020,* forecasted that the global demand for higher education in Anglophone countries will grow at 6% p.a. between now and 2020, of which three quarters will come from Asia.

Crewe (2004) expressed his regret over the report of OECD that, although the number of international students in the UK has grown significantly, the UK's share of the overseas student market declined from 16% in 1998 to 12% in 2002. This is because of the fact that other Anglophone HE systems (e.g. Australia and Canada) are competing effectively in this market of education. The governments of Malaysia and Singapore are investing heavily in their universities in order to make them regional hubs

for the Far East. In Europe a growing number of universities are offering full degree programmes in English and the EU's Erasmus Mundus programme is attracting international students.

Table 4: Students' Enrolment Trend in different Fields of Studies in the UK

Serial No.	Disciplines	Number of Students	Percentage Increase/Decrease
1.	Archaeology	------	-10.00%
2.	Astronomy	------	-17.00%
3.	Biology	23367	+06.00%
4.	Chemistry	20786	+11.30%
5.	Civil Engineering	18605	+13.00%
6.	Economics	37974	+12.80%
7.	English	55581	+07.60%
8.	Fine art	09703	+10.50%
9.	History	06021	+09.20%
10.	Maths	33790	+10.00%
11.	Music	21281	+09.90%
12.	Physics	19140	+12.20%
13.	Business and administrative studies	45061	+25.00%
14.	tourism, transport and travel degrees	5,545	+30.00%

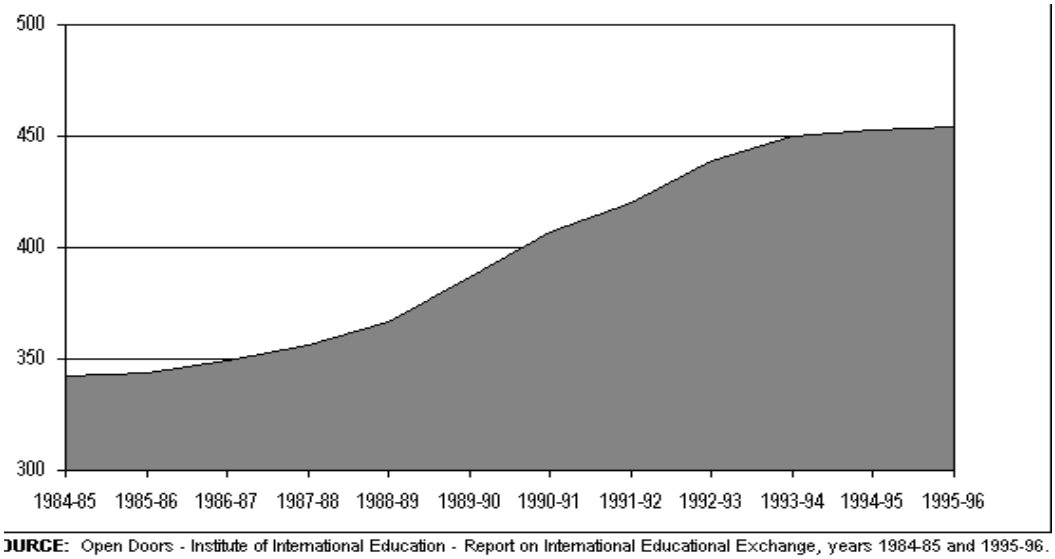
Source: Based on the data from BBC NEWS (http://news.bbc.co.uk/1/hi/education/6360327.stm; 27.02.2007)

6. European and Global Image of the United Kingdom

Nothing is absolute in this physical world (which is being governed by certain laws of nature). One has to see always the relative picture in every phenomenon. In order to have rather clear picture of the UK it seems apt to see it through the mirror of comparison. The writer has tried to take its image relative to the USA, a giant in the world of knowledge and other European countries with special emphasis on France.

6.1 Graduates in the United States of America

Overall enrolment in U.S. institutions of higher education increased about 7 million in 1967 to 14.5 million in 1992, remained at that level until 1997, and rose to 15.6 million by 2000 (National Science Board, 2004).



(Source: http://www.nsf.gov/statistics/nsf00318/c2s1.htm#conclud2, accessed on 27.02.2007)

Figure 4: Foreign Students (in thousands) in the American Universities

The 1990s witnessed a worldwide increase in the number of students going abroad for higher education study to the well-established destinations of the United States, the United Kingdom, and France. However, other countries, including Japan, Canada, and Germany, also expanded their enrolment of foreign graduate students, especially in Science & Engineering (National Science Board, 2004).

In 2003–04, there were about 573,000 foreign students studying at U.S. colleges and universities. Fifty-seven percent of these students were from Asian countries (http://nces.ed.gov/programs/digest/d05/ch_6.asp; accessed on 14.03.2007).

6.2 Graduates and the Labour Market in the Europe

Brennan and Fellows (1996) made to show the comparative picture of UK and Germany. They found identical employment rate (i.e. 90 %) in the two states, in full time few years after graduation. They also showed that the British graduates are slightly more likely to be self-employed where as the German graduates are rather more likely to have needed their degrees in order to have their current jobs (because German market is more highly regulated by educational qualifications than its British counterparts. Moscati and Pugliese (1996) in Italy discovered the greater divorce between its higher education and the world of labour. Beltramo and his fellows (1996) in France concluded that the absence of a shortage of scientists over the next few years is not really surprising, because, according to them, the PhD enrolment has been increased since 1988. However, Marin-Rovet et al. (2000) in the NSF (National Science Foundation) workshop on the International Mobility of Scientists (http://www.nsf.gov/nsb/; accessed on 27.02.2007), showed a startling picture of the international migration of scientists from France to abroad. They convincingly reported the facts in favour of their thesis.

Murdoch (2002) mentioned employment prospects for graduates from CHEERS data (Careers after Higher Education: a European Research Study was a European wide postal survey carried in 1998. See http://www.uni-kassel.de/wz1/tseregs.htm). He depicted that five (Finland, Sweden, the Czech Republic, Austria and Germany) of the eleven European countries are relatively favourable compared with the rest of the countries included in his study. The unemployment rate for graduates entering the labour market for these countries was found to be less than 7 % (cf. for example, OECD, 1997).

In the case of France, the Netherlands, Norway and the United Kingdom, the employment rates for the same graduates were slightly higher (around 10 %). However, in the case of Italy and Spain, the unemployment rates were very high (over 25 %) (OECD, Ibid).

In the five (France, the Netherlands, the United Kingdom, Norway and the Czech Republic) of the eleven countries (involved in CHEERS) graduate employment prospects have improved since the mid-90s after a difficult period during the first half of the 90s. For example, the unemployment rate for the graduate entering the labour market has fallen since 1995 in the aforementioned five countries. Murdoch (2002) indicated that the graduate unemployment rate was:

- 9.3 % in France in the late 90s (cf. for example, Martinelli and Vergnies, 1999) compared with 11.5 % in 1993 (Martinelli and Vergnies, 1995)
- 11 % in the united Kingdom in 1996 (Woodley and Brennan, 2000) compared with 18.7 % in 1993 (Mason, 1995)
- 5 % male graduates and 10 % female graduates in the Netherlands in 1996 compared with respectively 8 % and 11 % in 1994 (Allen et al., 2000; Wielers and Glebbeck, 1995)
- 10 % in Norway in 1996 compared with 12 % in 1992 (Arnesen, 2000; Aamodt and Arnesen, 1995)
- 1.9 % in 1997 in the Czech Republic compared with 9.3 % in 1993 (Kuchar et al., 2000; Hendrichova, 1995)

However, in the case of other six countries (Italy, Spain, Germany, Austria, Finland, and Japan) there is a different picture. The data from Sweden could not be available. In most of these countries the unemployment rate for graduates entering the labour market has remained constant since the mid-90s after generally sharp increases in the early 90s. In the case of Italy, Spain, Austria, and Finland following were the graduate unemployment rates:

- 25.5 % in Italy in 1995 (Moscati and Rostan, 2000)
- 26.3 % (3-year Diplomado) and 32.3 % (5-year Licenciatura) in Spain in 1997 (Mora et al., 2000)

- 5.5 % in Austria in 1994 (Kellermann and Sagmeister, 2000)
- 6.6 % in 1995 in Finland (Kivinen et al., 2000)

In the case of Germany the unemployment rate of graduates remained fairly stable throughout the 90s even during the aftermath of reunification (Schomburg, 2000). Indeed, between 1990 and 1997 the unemployment rate remained at around 4 % for university graduates and 3 % for *Fachhochschulen* graduates (Schomburg, Ibid).

7. Situation in France

Martin-Rovet et al. (2000) presented their article (entitled "Higher Education in France and the International Migration of Scientists" in the NSF workshop on the issue of 'Graduate Education Reform in Europe, Asia, and the Americas and the International Mobility of Scientists and Engineers'. According to them in France between 1960 and 1997 the number of students enrolled in higher education rose from 310,000 to 2.1 million. The students are distributed between the *Ecoles* (238 engineering schools, 230 business schools), which select 9.5 % of the students in higher education; the general university system, which educates 62 % of the total; technical and technological higher education institutions (*Instituts universitaires de Technologie, écoles universitaires d'ingénieurs)* which account for 16 %; and paramedical and social training, which make up the remainder.

France, with its long tradition of higher education, produces a considerable number of PhDs. In fact, it produces a higher percentage of doctors per million inhabitants than any other industrialized country (see Table 5).

Table 5: PhD Theses per Million Inhabitants in the Industrialised Countries

Country	Number of theses		Population (millions)		Theses per million inhabitants
Australia.....	(1993)	1,803		17.7	102
Canada.....	(1993)	3,356		29.0	116
Denmark.....	(1992)	512		5.2	98
France.....	(1995)	9,800		58.5	168
Germany.....	(1993)	12,400		81.0	153
Great Britain.....	(1994)	8,300		58.0	143
India.....	(1987)	4,177	*(est.)*	700.0	6
Italy.....	(1998)	2,400		57.0	42
Japan.....	(1993)	12,000		124.5	96
Mexico.....	(1990)	269		86.2	3
United States...	(1994)	41,011		260.0	158

SOURCE: French Ministry for National Education, Research and Technology (MENRT), 1997.

(Source: http://www.nsf.gov/statistics/nsf00318/c2s1.htm#conclud2, accessed on 27.02.2007)

France ranks fourth in research and development (R&D) budget, after the United States, Japan, and Germany, and fifth in the publications after the United States, the United Kingdom, Japan, and Germany, its influence in science education is remarkable (Martin-Rovet et al., 2000). Its success is also due to a conscious national effort over the past 10 years to improve and expand its higher education establishment.

Table 6: Number of French PhDs in Different Fields of Study

Disciplines	1989	1990	1991	1992	1993	1994	1995	1996
Total	5,963	6,782	7,198	8,585	9,295	10,602	9,801	10,963
Mathematics	198	233	247	296	356	418	364	426
Physics and chemistry	1,378	1,466	1,537	1,897	1,940	2,168	1,943	2,148
Geosciences	328	335	313	418	410	439	453	499
Computer and information sciences	810	868	903	1,029	1,085	1,176	1,237	1,342
Life sciences	1,223	1,436	1,409	1,664	1,843	1,972	1,882	1,999
Social sciences and humanities	1,017	1,256	1,425	1,746	2,006	2,540	2,197	2,414
Law	545	621	706	832	908	1,071	906	1,139
Engineering	464	567	658	703	747	818	819	996

SOURCE: French Ministry for National Education, Research and Technology (MENRT), 1997.

(Source: http://www.nsf.gov/statistics/nsf00318/c2s1.htm#conclud2, accessed on 27.02.2007)

Between 1989 and 1997, the number of PhDs awarded doubled from 6,000 to 12,000. The Table 6 shows this growth through the year 1996. All disciplines demonstrated this strong growth. The social sciences and humanities represent almost one-fourth of the PhDs awarded. Physics and chemistry and the life sciences were also popular.

There is almost no financing available in France for French postdoctorates. Therefore, more and more French PhDs have to seek postdoctoral positions abroad. This is exactly what alarmed Martin-Rovet et al. (2000).

7.1 Foreign Students in France

France has always been one of the favourite destinations of immigrants from the rest of Europe, from Africa, and more recently from Asia. Immigrants come to France when migrating to the West, and also when migrating from the former French colonies.

Table 7: Foreign Students in French Universities

Foreign Students	1985	1989	1991	1992	1993	1994	1995	1996
Number of foreign students in thousands	132	132	137	138	140	134	130	125
% of foreign students	13.6	11.8	11.2	10.7	10	9.4	8.9	8.6

SOURCE: French Ministry for National Education, Research and Technology (MENRT), 1997.

(Source: http://www.nsf.gov/statistics/nsf00318/c2s1.htm#conclud2, accessed on 27.02.2007)

The French educational system is one of the major attractions. In 1996-97, there were 1,449,129 students in French universities, of which 125,205 (8.6 percent) were foreigners. For the past 10 years, this percentage has declined slightly. In 1985-86, 13.6 percent of the entire student population came from other countries.

Half of the foreign student population comes from Africa (see Table 7.1); they are evenly distributed among all the sciences and humanities. Twenty-nine percent come from other European countries, and show a marked preference for the humanities and social sciences. Just 2,774 students (2 percent) come from the United States to study in France. Nearly all of them take liberal arts and social sciences. Only 100 pursue courses in science and engineering (S&E).

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Table 7.1: Foreign Students (Region wise and Discipline wise) in French Universities

Region	Law	Economics	Liberal arts and social science	Science and engineering	Medicine, pharmacy, and dentistry	Total
Total	15,418	16,368	47,033	27,811	18,575	125,205
% foreigners	8.2	10.7	9.1	5.5	12.6	8.6
Europe	5,557	3,905	17,563	6,055	2,736	35,816
European Union	4,394	2,823	13,627	4,443	1,657	26,944
Asia	1,358	1,512	6,451	3,761	3,249	16,331
Africa	7,485	10,392	16,560	16,616	11,937	62,990
Americas	989	527	5,333	1,290	609	8,748
United States	353	59	2,225	104	33	2,774
Brazil	93	71	687	274	94	1,219
Canada	126	67	600	152	56	1,001
Oceania	7	10	95	23	5	140
Stateless	22	22	1,031	66	39	1,180

SOURCE: French Ministry for National Education, Research and Technology (MENRT), 1997.

(Source: http://www.nsf.gov/statistics/nsf00318/c2s1.htm#conclud2, accessed on 27.02.2007)

7.2 Doctoral students in France

The distribution of students by origin at the doctoral level shows approximately the same proportion as that of all foreign students in French universities.

Table 8: Foreign Students Receiving Doctorate from French Universities

Country of origin	Number	Percent
Asia	276	9.8
Eastern Europe	136	4.8
Europe	365	13.0
Latin America	261	9.3
Near & Middle East	240	8.6
North Africa	1,015	36.2
North America	53	1.9
Sub-Saharan Africa	399	14.2
Other	62	2.2

SOURCE: French Ministry for National Education, Research and Technology (MENRT), 1997.

(Source: http://www.nsf.gov/statistics/nsf00318/c2s1.htm#conclud2, accessed on 27.02.2007)

That same year (1996-97), there were 2,807 doctoral degrees awarded to foreign students, representing 27.1 percent of all doctorates awarded that year. The proportion of foreign degree recipients was 1.2 percent lower than in 1995, although the proportion of Europeans remained the same at 18.4 percent. All scientific disciplines were affected by this slight reduction. At this level too, more than half of the degree recipients in 1996 came from Africa. Even now, Europeans tend to pursue doctorates in their own countries. Nearly 10 percent come from Latin America. This relatively high number reflects the fact that France is a traditional refuge for immigrants seeking political asylum from these countries. Latin Americans prefer France as an alternative to the United States and Spain.

Mathematics attracts the highest percentage of foreign students pursuing doctorates, although the highest number of students is found in the humanities and social sciences. Physics and chemistry attract the next highest number. The rate at which foreign students return to their countries of origin has dropped slightly; half of them do go home in the 18-month period following their thesis defence.

Table 9: Distribution and Rate of Return of French PhDs of Foreign Origin

Disciplines	Number of foreign doctors	Percentage of all doctors	Number of returns to country of origin	Percentage of returns to country of origin
Total	2,807	27.1	992	35.3
Mathematics	161	38.2	42	26.1
Physics and chemistry	500	24.4	196	39.2
Geosciences	149	32.1	52	34.9
Computer and information sciences	366	28.4	91	24.9
Life sciences	345	17.7	125	36.2
Social sciences and humanities	633	29.9	244	38.5
Law	343	31.7	121	35.3
Engineering	310	32.0	121	39.0

SOURCE: French Ministry for National Education, Research and Technology (MENRT), 1997.

(Source: http://www.nsf.gov/statistics/nsf00318/c2s1.htm#conclud2, accessed on 27.02.2007)

Every year, about 500 new foreign postdoctorates find employment in French labs. The proportion of foreigners at the postdoctoral level has greatly decreased. In 1995, this group still accounted for 38 percent; in 1996, it was down to only 22 percent foreigners. The percentage of postdoctorates returning to their own countries is between 35 and 50 percent by the end of 2 years.

8. Economic Impact of Higher Education in the United Kingdom

Now we return to the main thrust of the discourse zeroing on the economic impact of UK higher education. The question – whether such a stable and increasingly competitive economic position of UK has any thing to do with its (quantity and quality of) higher education – was best responded by the three UK-wide studies, carried and published by the Universities UK in 1997, 2002 and 2006. These studies investigated the impact of the higher education sector on the national economy.

Table 10: Employment in UK Higher Education Institutions

No.	Employment in UK Higher Education Institutions	n	Percentage
1.	Managers	11660	03.40%
2.	Academic professionals (including professors, lecturers, researchers and other academic posts)	150230	44.40%
3.	Non-academic professionals	27170	08.00%
4.	Laboratory, engineering, building, IT & medical technicians (including nurses)	27245	08.10%
5.	Student welfare workers, career advisors, vocational training instructors, personnel and planning officers	7275	02.20%
6.	Artistic, media, public relations, marketing & sports occupations	4705	01.40%
7.	Library assistants, clerks & general administrative assistants	44520	13.20%
8.	Secretaries typists, receptionists & telephonists	19600	05.80%
9.	Chefs, gardeners, electrical & construction trades, mechanical fitters and printers	5520	01.60%
10.	Caretakers, residential wardens, sports & leisure attendants, nursery nurses & care occupations	4910	01.50%
11.	Retails & customer service occupations	1125	00.30%
12.	Drivers, maintenance supervisors & plant operatives	1540	00.50%
13.	Cleaners, catering assistants, security officers, porters & maintenance workers	32635	09.70%
14.	**Total**	**338135**	**100.00%**

(Source: Higher Education Statistics Agency, UK; http://www.hesa.ac.uk/; accessed on 27.02.2007)

The economic importance of higher education has been much more recognised through all the three studies. The UK higher education is seen as being of key importance in the creation and transfer of knowledge to the economy through its teaching, research and other activities. The White Paper on *The Future of Higher Education* (2003) and the Lambert Review on *University-Business Collaboration* (2003) envisaged the sector as playing a pivotal role in ensuring the UK's economic competitiveness, the third study stated (Bone, 2006). This third study was reported (Bone, 2006) to be followed on from, and update, earlier analyses of higher education (*The impact of universities and colleges on the UK economy*, McNicoll, Mc,Cluskey & Kelly, CVCP 1997 and *The impact of higher education institutions on the UK economy*, Kelly, Marsh & McNicoll, Universities UK 2002).

Higher education institutions, besides employing the academics, provide jobs for a very wide range of staff across a number of occupations (Bone, 2006). (For example, The University of Strathclyde is one of the top ten employers in the city of Glasgow). This new aspect of higher education regarding its economic impact has only recently been recognised. In 2003/2004 higher education institutions employed over 338,000 all over the UK, according to the data (in the Table 10) from the Higher Education Statistics Agency (HESA), UK (http://www.hesa.ac.uk/; accessed on 27.02.2007).

9. Economic Impact of Overseas Students and Visitors

The third study of the University UK (Bone, 2006) describes another very important economic contribution from overseas students and visitors to the UK higher education institutions.

In UK very large number of students comes from other countries of the world. In 2003/2004 there were 300,050 students from out side the UK registered at UK institutions. It made up around 13% of the total student population. Total estimated off-campus expenditure figure for international students in the UK was £1.54bn as reported in this study (Bone, 2006).

UK higher education institutions play vital role in attracting the business and leisure visitors which contribute to the UK economy in the same way as that of the students. This study gave an estimate of 904,800 business and 347,130 leisure visitor bed nights in 2003/2004(estimated personal off-campus expenditure for international visitors amounted to more than £106 million. The resulting impact of the overseas students and overseas visitors on the UK economy is shown in the following figure.

Table 11: Impact of Overseas Students and Overseas Visitors Expenditure 2003-2004

No	Heads	Overseas students	Overseas Visitors
1.	Total personal (off-campus) expenditure	£1.54 billion	£106.15 million
2.	Expenditure on UK goods and services	£1.01 billion	£79.83 million
3.	Knock-on output generated throughout UK economy	£2.40 billion	£199.56 million
4.	Knock-on employment generated throughout UK	21,924 full time equivalent jobs	2715 full time equivalent jobs

Source: (Bone; 2006; www.universitiesuk.ac.uk; accessed on 27.02.2007)

It is clear that while the activity of the higher education institutions has the most significant impact on the economy, the economic activity generated by the off-campus expenditure of international students and visitors is also important and adds an additional dimension to the role of higher education institutions within the economy.

The report confirms the growing economic importance of the sector which had an income of £16.87bn a year in 2003/2004 (compared with £12.80bn in 1999/2000), gross export earnings of £3.60bn and employed 1.2% of the total work force. In terms of its wider economic impact the sector generated over £45bn of output (it has a higher than average output multiplier). The equivalent figure ago was nearly £35bn, confirming a rapid growth in economic impact. The report also confirms the substantial employment effect of higher education activity with around 600,000 jobs being created through the economy in 2003/2004. Of these some 330,000 people were directly employed by higher education institutions. The report provides further evidence of the importance of international students to the sector and the wider economy. One significant impact is the volume of personal off-campus expenditure of these students, which amounted to £1.5bn in 2003/2004.

The higher education sector generated £45.1 billion of UK industry output. Higher education institutions directly provide over 280,000 Full Time Equivalent (FTE) jobs, equivalent to 1.2% of the workforce in employment. Over 301,000 additional jobs were generated throughout the economy through secondary effects, taking the total employment dependent on UK higher education to over 581,000 Full Time Equivalent (FTE) jobs.

Table 12: Overall Impact of the UK Higher Education Sector in the UK Economy

	Higher Education Institutions	Overseas Students	Overseas Visitors	The Higher Education Sector
Direct output	£16.9 billion	0	0	£16.9 billion
Secondary output	£25.6 billion	£2.4 billion	£0.2 billion	£28.2 billion
Total output generated (direct +secondary)	£42.5 billion	£2.4 billion	£0.2 billion	**£45.1 billion**
Direct employment	280,146 FTEs	0	0	280,146 FTEs
Secondary employment	276,438 FTEs	21,924 FTEs	2715 FTEs	301,077 FTEs
Total employment generated (direct +secondary)	556,584 FTEs	21,924 FTEs	2715 FTEs	**581,223 FTEs**
Export earnings	£2.0 billion	£1.5 billion	£0.1 billion	**£3.6 billion**

Source: Bone; 2006 (www.universitiesuk.ac.uk; accessed on 27.02.2007)

UK higher education was also a major service sector export earner, attracting £3.6 billion of international revenue, £2 billion of which was paid directly to UK higher education institutions for their services.

10. Conclusion

Although, UK comes second (after USA – a giant in knowledge and economy) in the world, yet the competing situation in France could not be overlooked. To me it looks reasonable to deduce the result that the UK system of higher education is efficient enough in the production (quantitatively as well as qualitatively) of the graduates.

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