GLAECONOMICS

World City, World Knowledge

The economic contribution of London's higher education sector

Transport for London

LONDON DEVELOPMENT AGENCY

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Executive Summary

This report examines how London's higher education institutions make an important contribution to the city's economy and to the UK as a whole. It estimates the direct impact of higher education in London, in terms of employment, output and spending. It also estimates the value of investment in higher education in terms of the human capital it generates.

Higher education in London

There are 41 higher education institutions in London, with over 340,000 students and some of the largest undergraduate universities in the UK. They specialise in a wide range of areas, from business to dance and drama.

London's higher education sector adds significant value to London in terms of economic activity and employment. The London higher education sector generated £3.8-£4.6 billion of output in 2001/02, equivalent to 2.5 to 3 per cent of London's output. The sector created between 66,700 and 75,500 full-time equivalent jobs in London, which represents 1.6 to 1.8 per cent of London's employment.

The UK-wide impact

Higher education institutions in London, and overseas students and visitors to these institutions, have an impact on the UK that extends well beyond the capital. In 2001/02, London's higher education sector generated nearly £9 billion for the UK economy. This included £746 million in export earnings, such as overseas income and the money spent by overseas students and visitors to London institutions. In terms of employment, London's higher education sector generated 122,000 full-time equivalent jobs across the UK.

The benefits of human capital

Higher education provides students with skills that have a long-term impact on productivity and consequently output and employment. Investment in people (gaining knowledge and skills) creates human capital, which leads to higher productivity and higher earnings in the economy.

This adds value to London's economy and to the UK as a whole. The total economic gain from the higher earnings of London graduates, over their working lives, is around £11.7 billion. Around £7.2 billion of this accrues to London. This is a conservative estimate based on available information and some assumptions, and looks only at gains to individuals who have undertaken higher education studies. It excludes the wider social benefits of higher education, and does not take account of the value of the research and knowledge generated by London higher education institutions.

Estimating the direct economic impact on individuals alone does not capture the full benefits of

investment in human capital. There is evidence that higher education provides substantial wider benefits to society. Many economists argue that higher education can help to combat unemployment and promote social inclusion and cohesion.

The Organisation for Economic Cooperation and Development (OECD) estimated that the social rates of return on education in the UK were 14 per cent for women and 15 per cent for men in 1999/2000. These returns are large and higher than the return on a risk-free investment. The UK has the highest social returns from higher education compared with other OECD countries. The relatively high social returns in the UK from higher education appear to be a consequence of shorter courses in Britain's universities and a high completion rate compared to many other OECD countries. Investment in London's higher education sector has clear benefits beyond those gained by individuals who receive it.

Access and participation

It is important that all groups in society have the opportunity to benefit from higher education. The participation rates of young Londoners in higher education are higher than the UK as whole. London participation rates also rose by twice as much as the UK between 1997/98 and 2000/01, but have flattened off since then. However, this rapid expansion has generally benefited individuals from higher income families more than those from lower income families – higher education participation rates in London's less prosperous boroughs have not caught up with the more prosperous boroughs.

The future

London higher education institutions need to expand in order to meet demand. They are successful in attracting research income, but cost pressures and the need to continue investing in infrastructure and facilities are intense.

London is a world centre of research – it attracts nearly 25 per cent of all higher education research income in the UK. Not surprisingly, London higher education institutions receive almost double the amount of research income per student compared to institutions outside London. Also, as London is a research-intensive region, 8 per cent of higher education students are postgraduates from overseas compared with 6 per cent in the UK as a whole.

The financial position of London and UK higher education institutions deteriorated between 1997/98 and 2001/02, although London's institutions face more financial pressures than institutions outside the capital. They incurred a modest financial deficit in the 2001/02 academic year, and growth in expenditure outpaced growth in income between 1997/98 and 2001/02.

More investment is urgently required if these important institutions are to meet the challenges of providing the skills that London needs.

Introduction

Higher education affects the economy in several ways. At one level, people are directly employed by the higher education sector in a wide range of roles, such as, as lecturers, administrative support staff and caterers. Students also spend money on tuition fees and living expenses where they study, which brings money directly into the local economy.

However, the economic contribution of higher education cannot be calculated using current spending figures alone. In the long run, education provides people with knowledge and skills that can lead to better access to employment opportunities and higher earnings. In this way, higher education can be viewed as an investment for the individual – known as human capital.[1] Studies have shown that this investment will also increase the level of economic output more generally.[2]

In addition, there is evidence of an association between the concentration of well-educated individuals in cities and economic growth.[3] The knowledge that these people have will spill over to others and increase their productivity. This effect is known as knowledge spillover and can promote the growth of local and national economies. The concentration of people in cities facilitates the flow of ideas among workers, enhancing the possibility of knowledge spillovers. However, there is still debate as to whether the accumulation of human capital leads to a sustained increase in the growth rate as opposed to the level of output.

The OECD highlights the wider positive consequences of investment in education, such as improved public health, a better environment, reduced crime, better parenting, wider political and community participation and greater social cohesion.[4] These positive effects improve the welfare of society, but may have little or no effect on wages or output.[5] These benefits are also difficult to quantify.

Studies have shown that higher education institutions directly generate significant employment and income in both the local and national economies.[6] The UK higher education sector employs 1.4 per cent of the total UK workforce and generates £35 billion of output in a year.[7] More recently, the East Midlands Development Agency undertook an impact study that estimated East Midlands higher education institutions generated £1.5 billion of output in the region for the academic year 2001/02.

To date, however, there are no studies that measure the economic contribution of higher education to the London economy on any of the dimensions described above. The direct effects, the accumulation of skills and the potential to increase opportunity and promote social equality have not been looked at specifically for London.

The Greater London Authority, the London Development Agency and

London Higher (formerly the London Higher Education Consortium) are working together to gain a better understanding of the economic contribution that London's higher education sector makes to the regional and national economies. The work is considering direct and indirect effects, and short and long-term effects. In fact, if the primary economic contribution of higher education is through developing the knowledge and skills of the workforce, then a long-term view will be crucial. Acquiring skills is a dynamic process and people need to update their skills to continue being productive over their working life.

Aim and scope of the report

This report is the first step in GLA Economics' efforts to measure, assess and improve the contribution that London's higher education institutions make to London's economy.

It provides a framework for assessing the benefits from higher education, and discusses the economic contribution that London's higher education sector makes to the UK economy, as well as London's economy. It estimates the direct impact of higher education, treating the sector as a conventional industry that generates income, expenditure and employment in the economy.[8] It also estimates the contribution that the sector makes to human capital – skills and ability. The important contribution that London higher education institutions make to research and knowledge generation are not covered in this report, but are included in a companion report by KPMG.[9]

In addition, this report looks at knowledge spillover effects for the London and UK economies. It examines access to higher education by analysing trends in higher education participation and equality of access in London and the UK.

Specifically, the following questions are addressed:

- What is the size of London's higher education sector?
- What is the economic contribution of London's higher education institutions?
- What are the estimated human capital benefits from London's higher education sector?
- What are the rates of return to higher education?[10]
- Have participation rates in higher education in London followed the national pattern?
- Are higher education institutions in London able to meet the demands placed upon them?

Chapter 1 of this report describes the characteristics of the higher education sector in terms of institutions and numbers of students. Chapter 2 quantifies the direct economic contribution of the higher education sector on the UK and London economies. Chapter 3 reports on the longer-term benefits of the higher education sector. Chapter 4 looks at the participation aspects of higher education. The final chapter reviews the constraints that higher education institutions currently face in meeting the demands placed upon them.

Chapter 1.
London's Higher Education Sector

Diversity

London is an internationally renowned centre of learning, with 41 higher education institutions,[11] which are diverse and have different specialities and distinct markets.[12] Higher education institutions in London have formed a strategic forum called London Higher to represent their views. This study includes all London Higher members (Table 1).[13]

Table 1. London's higher education sector, 2001/02 academic year

	Total HE students	Total undergraduates		Total postgraduates		% of total part-time HE students	Total FTE academic staff [b]
		UK	Overseas [a]	UK	Overseas		
University of Westminster	24,605	14,670	2,195	5,710	2,030	48.7	893
Middlesex University	24,150	15,745	3,550	3,010	1,845	31.2	875
London South Bank University	19,865	13,605	1,620	3,665	975	51.2	935
King's College London*	19,020	11,715	1,535	4,125	1,650	26.9	3,058
University of Greenwich	18,785	12,495	1,580	3,515	1,195	37.6	798
City University	18,720	10,050	1,595	4,900	2,170	53.6	693
Birkbeck College	17,840	14,320	45	3,095	385	96.3	430
University College London*	17,805	9,415	1,850	4,350	2,190	14.5	4,323
Kingston University	16,970	11,870	1,450	3,170	480	25.4	868
University of North London	16,420	11,060	2,125	2,260	970	40.4	623
Thames Valley University	16,100	13,460	1,020	1,470	155	53.7	463
Brunel University	14,410	9,685	675	2,985	1,065	24.1	790
London Guildhall University	14,070	10,300	1,430	1,910	430	38.7	505
University of East London	13,275	8,260	1,305	2,770	935	35.4	613
Imperial College London*	11,495	5,615	1,610	2,625	1,640	9.6	3,643
University of the Arts London (formerly The London Institute)	11,140	6,565	2,845	1,115	620	13.0	685
Queen Mary, University of London*	9,610	6,270	765	1,745	835	11.2	1,428

Table 1. continued...

	Total HE students	Total undergraduates		Total postgraduates		% of total part-time HE students	Total FTE academic staff [b]
		UK	Overseas [a]	UK	Overseas		
Roehampton University of Surrey	7,770	5,675	525	1,335	235	22.3	323
London School of Economics and Political Science*	7,695	1,790	1,495	1,265	3,145	17.0	645
Goldsmiths College*	7,240	4,440	560	1,685	560	31.6	448
Royal Holloway University of London*	5,775	3,300	820	1,135	520	10.9	623
Institute of Education*	4,860	60	0	4,040	760	63.2	260
School of Oriental and African Studies*	3,690	1,240	635	865	950	20.3	303
St George's Hospital Medical School*	3,470	2,650	115	625	80	57.3	680
St Mary's College	2,850	2,190	160	475	25	20.7	128
London Business School*	1,630	0	0	555	1,080	46.3	118
School of Pharmacy*	1,120	480	105	465	65	39.3	103
Royal College of Nursing	960	725	30	195	10	99.5	38
Royal Veterinary College*	950	605	120	165	65	13.2	168
London School of Hygiene and Tropical Medicine*	895	0	0	410	485	20.7	453
Rose Bruford College	875	710	125	30	10	34.9	38
Royal College of Art	840	0	0	575	260	4.8	80
University of London – Institutes and activities*	835	175	25	370	265	24.6	125
Ravensbourne College of Design and Communication	800	655	115	25	10	3.1	40
Central School of Speech and Drama	735	370	45	270	50	8.8	35
Wimbledon School of Art	630	430	65	115	25	16.7	35
Royal Academy of Music*	620	215	110	135	160	0.0	45
Royal College of Music	560	260	90	115	90	3.6	38
Institute of Cancer Research*	540	290	20	180	50	82.4	533
Trinity College of Music	490	280	85	85	35	8.2	28
Conservatoire for Dance and Drama	345	240	90	10	10	1.4	20
Total London	**340,455**	**211,880**	**32,530**	**67,545**	**28,515**	**36.6**	**26,918**
memo London Metropolitan University [c]	30,490	21,360	3,555	4,170	1,400	39.6	1,128
Total UK [d]	**2,086,085**	**1,493,910**	**122,320**	**349,435**	**120,450**	**39.8**	**131,525**

Source: Higher Education Students and Resources of Higher Education Institutions, Higher Education Statistical Agency 2001/02

Note: In August 2002 London Guildhall University and University of North London merged to form the London Metropolitan University.

** Colleges and institutes of the University of London*

[a] Overseas includes European Union students and students outside the European Union

[b] FTE refers to full-time-equivalent

[c] Formed by University of North London and London Guildhall University

[d] Total UK figures include the Open University.

There are other important London institutions such as the Open University, which has a London regional office, but the Higher Education Statistical Agency locates it in the South East. The Open University admitted its first students in 1971. It is now the country's largest university in terms of higher education students and is expanding rapidly.

London's higher education institutions range from large multi-faculty universities to specialist colleges and music academies. Many London institutions are internationally recognised and operate in a global market to recruit leading staff and students. A number of institutions seek to increase awareness of the opportunities higher education institutions can offer and recruit students who live or work in London. The presence of specialist higher education institutions such as the Conservatoire for Dance and Drama and the Royal Academy of Music reflects the importance of London as an internationally recognised centre of excellence for the performing and cultural arts.

Prior to 1992, the UK higher education sector was characterised by universities with degree awarding powers and polytechnics that did not have full degree awarding powers and provided more vocational courses. In 1992, the distinction disappeared and all higher education institutions were granted university status and degree awarding powers following the Further and Higher Education Act 1992.[14]

Nine London polytechnics were granted university status.[15] Today, these nine universities account for almost half of all higher education students in London, and a high proportion of these students are from London.[16]

The London School of Economics and Political Science, the School of Oriental and African Studies and the London Business School are all highly internationally oriented. The first two have the highest percentage of foreign undergraduate students among all London higher education institutions, with 45 per cent and 34 per cent respectively. Also, the London School of Economics and the London Business School attract a much higher proportion of overseas students than home students to their postgraduate courses, with 71 per cent and 66 per cent respectively of graduate students coming from abroad.

Size of London higher education institutions

Westminster and Middlesex Universities had the highest number of students in London in 2001/02, each with more than 24,000 students (Table 1).[17] This is around twice the average number of students per higher education institutions in the UK which stands at 12,300. The University of Leeds has the highest number of students in the UK at close to 32,000. London Metropolitan University became the largest London institution in August 2002 with over 30,000 students following the merger of the University of North London and London Guildhall University. Thames Valley University also represents a major development in higher education delivery, standing eleventh in terms of number of higher education students. More than a third of London higher education institutions have student numbers above the UK average.

In terms of the number of academic staff, University College of London is the UK's largest institution with 4,323 full-time equivalent academic jobs. Imperial College and King's College together employ around 6,700 academic staff.

Undergraduate/ postgraduate divide

There were 340,455 higher education students in London in the 2001/02 academic year, which is 16 per cent of the UK's higher education

students. A breakdown of students by undergraduate/ postgraduate status and mode of study is shown in Table 1.

The majority of higher education students in London (72 per cent) are undergraduates. However, the London Business School, the London School of Hygiene and Tropical Medicine and the Royal College of Art only have postgraduate students.

London has a higher share of postgraduate students (28 per cent) than the UK as a whole (23 per cent). London higher education institutions attract 20 per cent of all postgraduates coming to study in the UK. City University, King's College, the University of Westminster and the University College of London are highly oriented towards providing postgraduate courses. In particular, the University of Westminster and City University attract the largest number of postgraduate students of London institutions. Taken together, these two institutions have around 14,000 postgraduate students. By contrast, London's specialist institutions have small numbers of students and very few postgraduates.

Modes of study

Thirty-seven per cent of all higher education students in London are studying part-time, compared with 40 per cent nationally.

There are three institutions in London where more than 80 per cent of students study part time: the Royal College of Nursing (99.5 per cent); Birkbeck College (96 per cent); and the Institute of Cancer Research (82 per cent). In contrast, institutions offering courses in performing arts and medicine have a high proportion of full-time students.

The number of London higher education students has expanded by almost 14 per cent between 1997/98 and 2001/02 (Figure 1). The number of postgraduate students has increased by 22 per cent, while the number of undergraduates rose by 11 per cent.

Domestic and overseas students

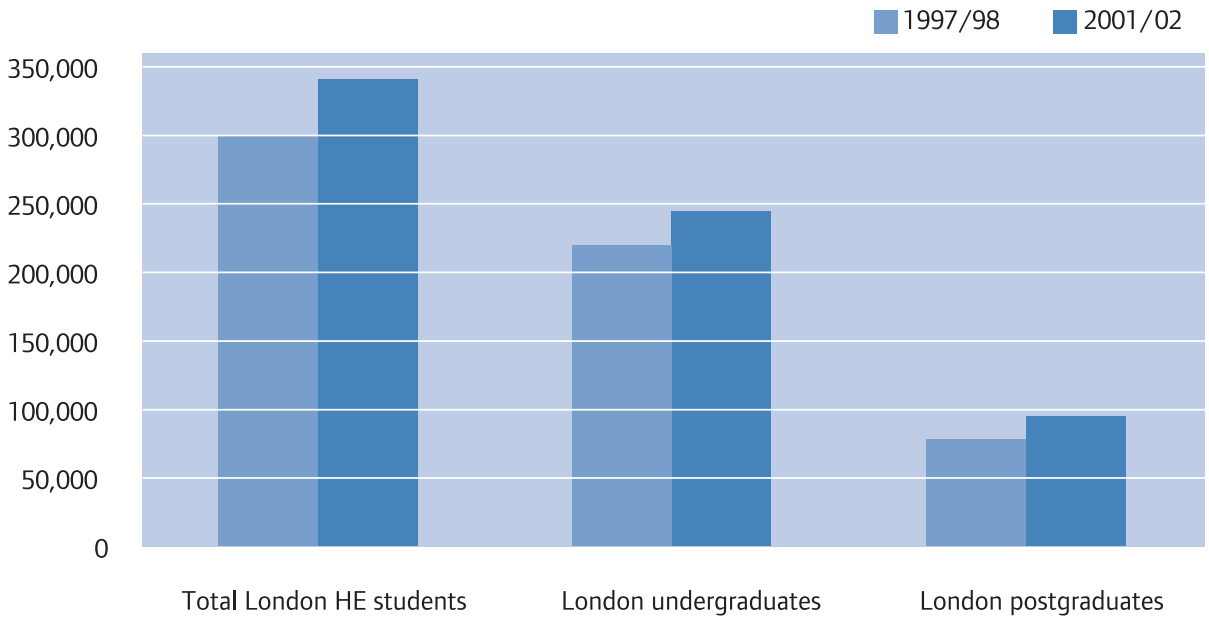
London higher education institutions have a high proportion of overseas students. 61,045 of London's higher education students are from overseas, which is 18 per cent of total student numbers compared to 12 per cent nationally. Not surprisingly, institutions with international reputations such as the London Business School, King's College, City University, University College London, Imperial College and the London School of Economics have a large proportion of overseas students.

In addition, two of the more recently established universities, Middlesex and Westminster also have a large proportion of overseas students, with 22 per cent and 17 per cent respectively.

In London's specialist art, music and drama institutions, between 25 and 30 per cent of students are from overseas.

Generally, UK higher education institutions have benefited from a rapid expansion in overseas postgraduate students between 1997/98 and 2001/02 (Table 2).

Figure 1. Numbers of students in London's higher education institutions

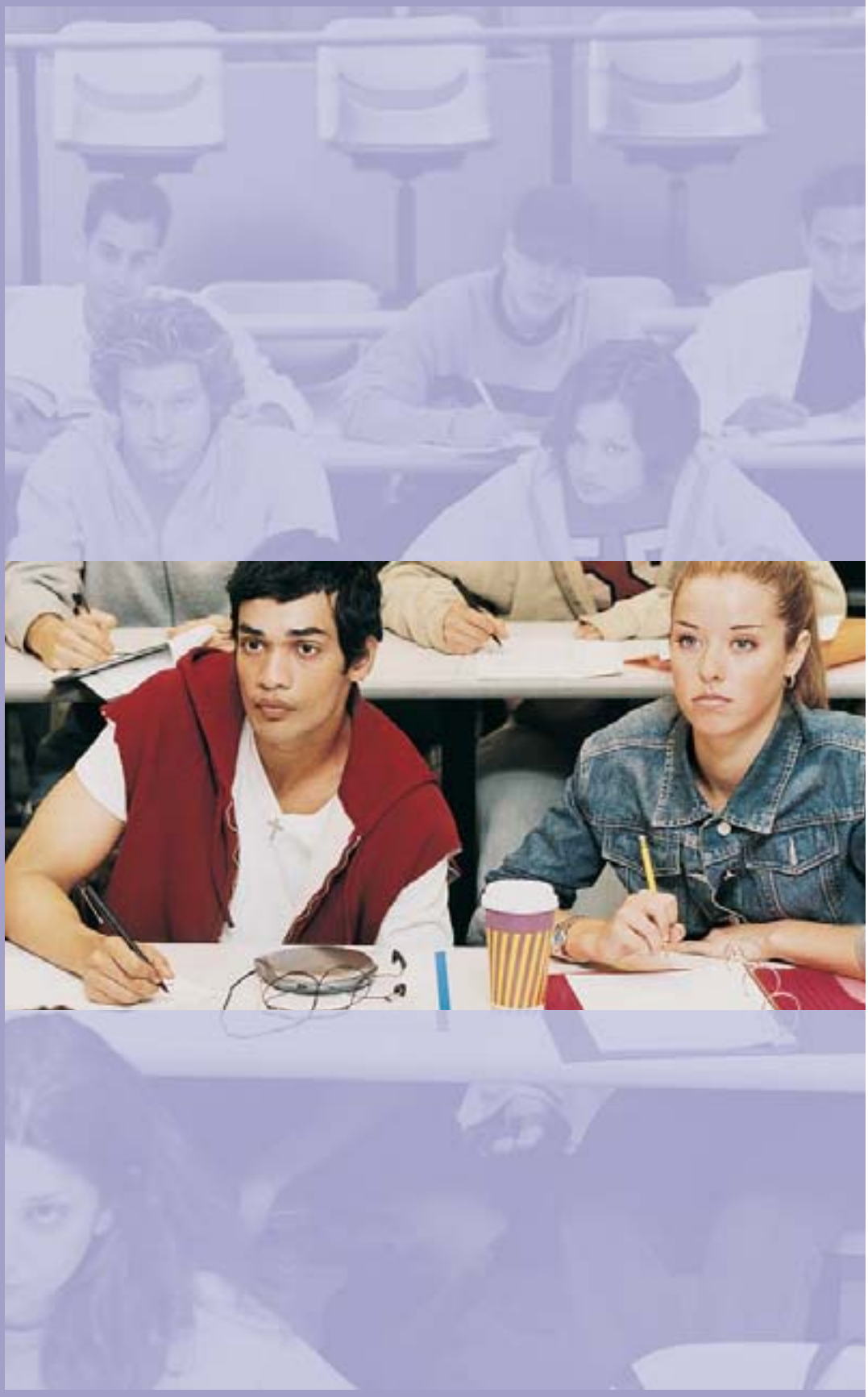


Source: Students in Higher Education Institutions, Higher Education Statistical Agency, 1997/98 and 2001/02

Table 2. Home and overseas higher education students

	Total students	Undergraduates		Postgraduates	
		UK	Overseas	UK	Overseas
1997/98 Total London	299,456	187,787	32,625	59,531	19,513
Total outside London	1,500,608	1,093,944	98,707	245,538	62,419
2001/02 Total London	340,455	211,880	32,530	67,545	28,515
Total outside London	1,745,630	1,282,030	89,790	281,890	91,935
Change between 1997/98 and 2001/02 in London	**13.7**	**12.8**	**-0.3**	**13.5**	**46.1**
Change between 1997/98 and 2001/02 outside London	**16.3**	**17.2**	**-9.0**	**14.8**	**47.3**

Source: Students in Higher Education Institutions, Higher Education Statistical Agency, 1997/98 and 2001/02



Chapter 2.
Higher Education as an Industry

The London Development Agency and GLA Economics jointly commissioned the University of Strathclyde to complete a study of the economic contribution of London higher education sector to the London and UK economies.[18] This chapter reports the main findings of that study.

Defining the sector

The Strathclyde report defined the London higher education sector as comprising the London higher education institutions plus the off-campus expenditure of all non-UK students and visitors to London higher education institutions in a study year (Figure 2).

The off-campus expenditure of UK students was not included in this definition of the sector and its impact. This is partly because students from London may remain in London and spend money there, even if they have not entered higher education in London. While the off-campus expenditure of students from the rest of the UK who come to study in London could reasonably be considered as an additional injection into the London economy, it was not included for technical and data availability reasons. Also, this expenditure is not additional to the UK economy as a whole, unlike the expenditure of overseas students. However, any money spent by domestic students directly associated with higher education, such as fees and accommodation, will be captured within the total income accruing to London higher education institutions.

London higher education institutions generate income, expenditure and employment in the region and make a contribution to the whole of the UK. They demand goods and services produced in and outside London, and their expenditure supports production in other industries and the workers employed to produce these goods and services.

Also, London higher education institutions attract overseas students and visitors who bring income directly to London higher education institutions and

Figure 2. Defining London's higher education sector

support economic activity via the money they spend in the region. This money would not have been spent in London if these higher education institutions were not based in London.

The Strathclyde approach

The University of Strathclyde approach measures the economic impact of the London higher education sector in terms of income, employment and expenditure in the UK economy (direct effects).

Additionally, it quantifies the knock-on, or multiplier, effects that the London higher education sector has on output and employment in the UK economy. These multiplier effects comprise two types of economic interaction: indirect and induced effects.

Indirect effects refer to purchases by the London higher education sector of goods and services used in the production of the output of higher educational services. These supplying industries also make purchases from other suppliers in order to fulfil orders from the London higher education sector.

Induced effects result from the spending of employees of London higher education institutions in the economy that in turn creates income for employees in other sectors who supply goods and services to them.

Multiplier effects only measure the additional economic impact of higher education (or any sector) in the short term. In the medium to longer term, suppliers to the higher education sector would adjust to any decrease in activity from the higher education sector by finding markets for their products elsewhere. This would compensate for at least some of the output lost through reduced higher education activity. In spite of these drawbacks, this method is used widely to review the importance of an industry, and how it is connected to the rest of the economy.

Understanding the Strathclyde methodology

A standard methodology for measuring the economic impact of a sector on local and national economies is to use an input-output model. This approach analyses the monetary flows to and from industries and institutions. It enables inputs and finished products that are purchased from other sectors within the local economy to be identified. Also, this approach identifies inputs that are purchased outside the local economy, and which finished products are exported outside the local economy. It builds a picture of the economic links between different sectors and different regions of the economy.

The Strathclyde model estimates the impacts on output and employment, including those from multiplier effects. It is derived from the official Office for National Statistics (ONS) 1998 UK input-output tables that assesses the economic contribution the London higher education sector makes to the UK and London economies. The input-output model was initially developed to quantify the economic impact of the UK higher education sector on the UK economy, and then adjusted to measure the economic impact of the London higher education sector on the London and UK economies (Figure 3).

Figure 3. Calculating the total contribution of London higher education

1. Direct effects (quantifiable in monetary terms)

All Income generated by London Higher Education Institutions (funding council, academic fees, research, other services, endowment, residence and catering) including income from overseas sources (gross export earnings)

Employment and workforce London higher education institutions (academic staff and non-academic including all occupational groups)

+

2. Multiplier effects, or indirect and induced effects (quantifiable in monetary terms)

Expenditure off campus in good and services: such as office supplies, energy, equipment as well as transport, clothing, catering, accommodation, entertainment, tourist attractions by London Higher Education Institutions students and visitors.

Income generated by: Employees in London Higher Education Institutions receive income, that when spent, in turn generates income for employees working in other businesses in London.

Overseas students and visitors spending off campus on goods and services generate output in the sectors supplying these individuals.

Employment and workforce Jobs generated in other sectors that supply goods and services to London higher education institutions, students and overseas visitors.

+

3. Human capital and other benefits from higher education (difficult to quantify in monetary terms)
This is covered in Chapter 3

- Well-educated individuals are more productive and earn higher wages than those with less education.
- Social benefits to society since more productive individuals can benefit other individuals who are less educated or skilled.
- Positive externalities: improved public health, better environment, better parenting, reduction of crime, wider political and community participation and greater social cohesion.
- Other benefits from education such as cultural and social benefits to the region and/or community.
- Knowledge transfer to the broader community from higher education institutions, eg through research outputs, spinout companies, consultancy services, advisory, work on government committees and employment of students.

=

Total economic contribution to the UK and London economies of the London higher education sector and benefits from education

Box 1. The Strathclyde methodology[19]

The model was constructed using an extended input-output framework that measures the impact of higher education on the economy and the demand for skilled labour.

Information on industry links between domestic sectors and those outside the UK was drawn from the ONS 1998 input-output accounts to form the basic input-output model.

The model is disaggregated into 123 UK industries, 371 occupations and 30 qualification levels.

The UK extended input-output labour market model provides results for the following variables:

- gross output for the higher education sector
- total employment in the higher education sector
- employment by occupation
- employment by qualification level.

The impact of the UK higher education sector's direct expenditure on UK gross output is measured in the following way:

- Output: For most sectors, gross output is calculated from figures for sales, turnover or net receipts. For some sectors such as distribution and transport, gross output is estimated from gross margins.
- Employment: Total employment is measured in physical units. In the Strathclyde report, full-time equivalent employment is defined as full employment plus half the number of part-time employees. This assumes that, on average, part-time employees work half the hours of a full-time employee.

Measuring the London higher education sector's contribution to the UK economy

Economic activity

The economic contribution assessed in this section relates to the 41 higher education institutions listed in Table 1. The Strathclyde approach did not include further education colleges that also provide higher education as the Higher Education Statistical Agency does not record data on these institutions.

London higher education institutions contribute to the UK economy by attracting money and investment from elsewhere in the world to the capital. London institutions generate net income from teaching and research. They generate employment and pay wages to their employees.

When London higher education institutions buy goods and services, they create additional economic activity through multiplier or knock-on effects in other industries in the UK, at least in the short term. To estimate the output and employment generated by expenditure by London higher education institutions, Strathclyde used information on final demand for products from UK industries.

The Higher Education Statistical Agency provides data on expenditure by higher education institutions by purpose rather than by purchase of identifiable products. For example, expenditure incurred when renovating premises would be recorded, but no information is available on the products purchased to achieve this. The University of Strathclyde obtained information on the amount that higher education institutions spend on UK goods and services through a survey. UK higher education institutions were asked to provide information on the geographical origin of their purchases. For this study, the pattern of domestic expenditure by London higher education institutions was assumed to be the same as UK higher education institutions.

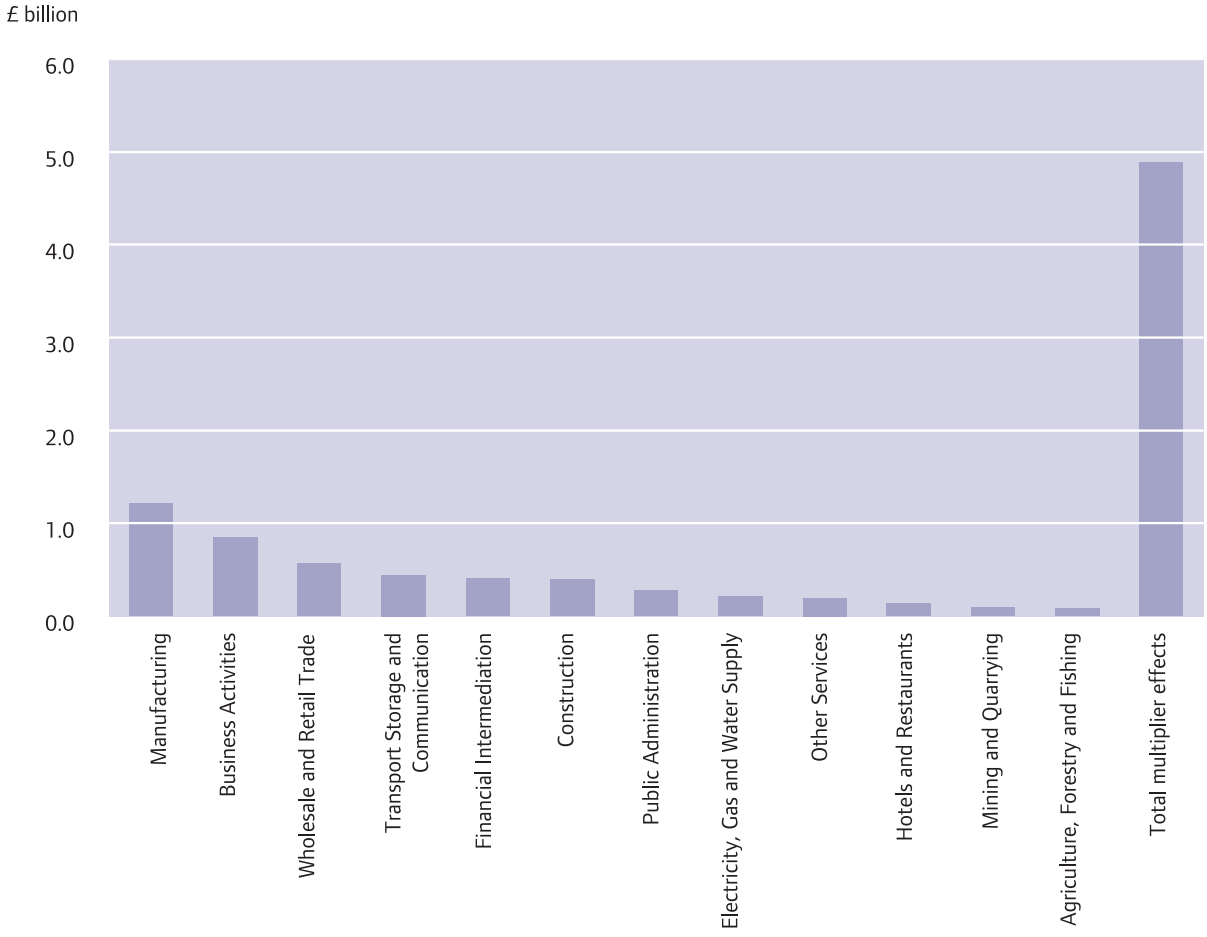
Table 3 shows estimates of the output generated in the UK economy by the London higher education institutions using the input-output model.

Table 3. Economic activity generated by London higher education institutions, 2001/02

	£ billion
Total expenditure	3.13
Of which:	
Expenditure on UK goods and services (excludes imports)	2.90
Direct output	3.13
Knock-on output generated in other sectors of the UK economy	4.89
Total output generated (direct and knock-on)	**8.02**

Source: U Kelly, I Mc Nicoll and D McLellan, Aspects of the Economic Impact of London Higher Education Institutions, University of Strathclyde, commissioned by the London Development Agency and GLA Economics, September 2003

Figure 4. Economic activity in other industries generated by London's higher education sector, 2001/02



Source: U Kelly, I Mc Nicoll and D McLellan, Aspects of the Economic Impact of London Higher Education Institutions, University of Strathclyde, commissioned by the London Development Agency and GLA Economics, September 2003

Total expenditure by London higher education institutions was £3.1 billion in the 2001/02 academic year. Of this, £2.9 billion was spent on UK goods and services.

London higher education institutions injected £8 billion into the UK economy. This consisted of £3.1 billion of their own output, and £4.9 billion generated through knock-on effects in other UK industries.

Figure 4 shows the economic links, or knock-on effects, to other industries in the UK economy as a result of spending by London higher education institutions. This output was spread across different industries, with the largest impact on manufacturing (£1.2 billion), business services (£0.8 billion) and wholesale and retail (£0.6 billion).

Employment

According to the Annual Business Inquiry, the London higher education sector employed around 71,000 employees in 2001. However, the ABI does not provide disaggregated data on the number of employees working in the various London higher education institutions, or the occupations these jobs fall in.

The Higher Education Statistical Agency publishes data on the number of academics in London higher education institutions, but there are no official figures for the number of non-academic staff. Strathclyde's estimates are included in Table 4.

In 2001/02, London higher education institutions employed 66,433 people, or 19 per cent of all UK higher education staff. In 1999/2000, UK institutions employed around 345,300 people. On a full-time equivalent basis, London institutions employed 58,636 people.

Academic staff are the largest group employed in London higher education institutions,

Table 4. Staff in London higher education institutions, 2001/02 academic year

	Full-time	Part-time	Total	% of total
Academic staff [a]	23,875	6,085	29,960	45.0
Non-academic staff:				
Senior management	863	69	932	1.4
Other management	6,935	3,655	10,590	16.0
Secretarial and clerical staff	12,328	3,126	15,454	23.3
Lab technicians/assistants	3,835	441	4,276	6.4
Security	891	328	1,219	1.8
Janitorial/cleaning	467	607	1,074	1.6
Residence and catering	817	867	1,684	2.5
Maintenance/trades	728	20	748	1.1
Other labourers/gardeners	11	0	11	0.0
Other	83	402	485	0.7
Total	**50,833**	**15,600**	**66,433**[b]	**100**

Source: U Kelly, I Mc Nicoll and D McLellan, Aspects of the Economic Impact of London Higher Education Institutions, University of Strathclyde, commissioned by the London Development Agency and GLA Economics, September 2003

Note: [a] From Resources of Higher Education Institutions, Higher Education Statistical Agency, 2001/02.
[b] Full-time equivalent jobs were calculated as the number of full-time employees plus half the number of part-time employees.

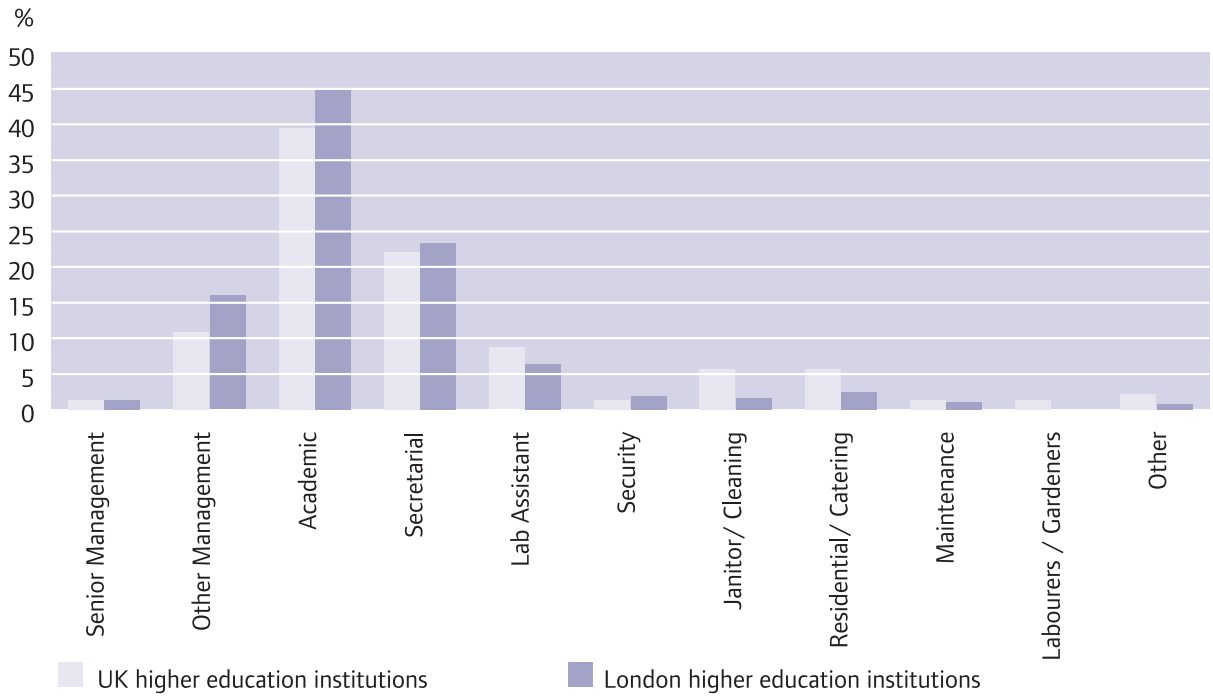
at 45 per cent of the total. However, higher education institutions employ a variety of staff including secretaries, administrators, librarians, catering and accommodation services employees, security and cleaning staff, support and maintenance staff and employees in sport and entertainment facilities. In total, non-academic staff make up 55 per cent of total employment in London higher education Institutions. Secretarial and clerical staff are the largest group, followed by other managerial staff. Low-skilled jobs account for a low proportion of positions.

There are some differences in the composition of London higher education institutions staff compared to UK higher education institutions generally (Figure 5). The main difference is that academic staff make up a higher proportion of employees in London higher education institutions than they do in the UK as a whole. This may be explained by the higher research income received per student in London institutions compared to non-London institutions (almost double). It is also not surprising given that four of the top ten institutions in terms of research performance are located in London. The mix of staff may also be due to:

- the compact nature of London's higher education institutions, which need fewer ground staff/ gardeners /maintenance staff
- fewer halls of residence
- most London higher education institutions contract out cleaning services
- the overall subject mix offered by London higher education institutions, which is biased away from laboratory subjects and require fewer technicians/ lab assistants.

For every 100 jobs created directly within London higher education institutions, another 98 jobs are generated elsewhere in the UK economy. (This figure is based on an estimated

Figure 5. Higher education employees in London compared to the UK



Source: U Kelly, I Mc Nicoll and D McLellan, Aspects of the Economic Impact of London Higher Education Institutions, University of Strathclyde, commissioned by the London Development Agency and GLA Economics, September 2003

employment multiplier for London higher education institutions of 1.98). London higher education institutions generated 58,636 full-time equivalent jobs directly, and their demand for goods and services created an additional 58,000 jobs in other industries. Total full-time equivalent jobs resulting from London higher education institutions activities is estimated to be 115,000, or 0.6 per cent of total UK full-time equivalent employment.

The additional impact of overseas students and visitors

Eighteen per cent of London's students come from abroad compared with 11 per cent nationally.[20] This provides an important source of export earnings for the UK economy, as overseas students pay tuition fees and all non-UK students incur living costs while studying here. For students from outside the European Union, fees can be more than three times those of home students. Nearly half the overseas students studying in London are undertaking postgraduate courses in which almost all students pay fees. Overseas students also spend money off-campus in London and throughout the UK.

Similarly, overseas visitors who come to London higher education institutions (eg to attend conferences) spend money on goods and services produced by UK industries. Their spending generates output and employment in London and across the UK.

Any money paid to higher education institutions by non-UK students (eg for fees or campus accommodation and catering) is captured within the accounts of higher education Institutions. However, off-campus expenditure also has an impact on the economy. Total off-campus personal expenditure by non-UK students is calculated by multiplying the total number of overseas students by their average annual academic year expenditure (excluding tuition fees) of £7,299,[21] which equals £444.9 million. This annual expenditure figure also includes spending on campus by non-UK students. To avoid double counting, money spent by these students on accommodation and catering in London higher education institutions (£78.1 million) was subtracted from this £444.9 million, giving total off-campus personal expenditure of £366.7 million (Table 5).

Table 5. Expenditure by overseas students and visitors in London, and the impact on the UK economy

	Overseas students	Overseas visitors
Total off-campus personal expenditure	£ 366.7m	£ 23.5m
Expenditure on UK goods and services (excluding imports)	£ 271.3m	£ 17.6m
Output generated throughout the UK economy (knock-on effects)	£602.5m	£44.2m
Employment generated throughout the UK economy (knock-on effects)	6,056 jobs	565 jobs

Source: U Kelly, R Marsh and I Mc Nicoll, The Impact of Higher Education Institutions on the UK Economy, University of Strathclyde, commissioned by Universities UK, May 2002

Of this £366.7 million, £271.3 million was spent on UK goods and services (excluding imports). The knock-on effects of this spending generated £602 million in output and over 6,000 full-time equivalent jobs in the UK economy.

Overall impact on the UK

Table 6 shows the overall economic impact (direct and knock-on effects) of the London higher education sector on the UK economy. Between them, London higher education institutions, overseas students and visitors to the higher education institutions generated £8.7 billion in output/economic activity, equivalent to 0.8 per cent of UK GDP. The London higher education sector generated 122,000 full-time equivalent jobs across the UK.

The London higher education sector generated total export earnings of £746 million for the UK. This includes overseas income (including from the European Union) accruing to London higher education institutions (£356 million) and off-campus personal expenditure of non-UK students and visitors (£390 million).[22]

The impact on London's economy

As well as estimating the impact of the London higher education sector on the UK economy, it is important to look at the impact in London. This is done by focusing on the proportion of knock-on effects that are likely to apply inside London.

London's share of the total UK impact is calculated by comparing the industrial structures in London and in the UK. Employment is the best measure of economic activity by industry for which official regional and national data is available. Table 7 shows London's share of total UK employment by industrial sector. It also shows London's location quotients, which measure regional specialisation. The location quotient is calculated as shown in Figure 6.

If London's location quotient is less than one, it means London is relatively unspecialised in that industry in relation to the UK.

Table 6. Overall economic contribution of London's higher education sector to the UK economy

Participants in the higher education sector	Output	Employment	Export earnings
	£ million	FTE jobs	£ million
London higher education institutions (direct and knock-on effects)	8,000	115, 300	355.9
Overseas students (knock-on effects)	602	6,100	366.7
Overseas visitors (knock-on effects)	44	600	23.5
Total	**8,700**	**122,000**	**746.1**

Source: U Kelly, I Mc Nicoll and D McLellan, Aspects of the Economic Impact of London Higher Education Institutions, University of Strathclyde, commissioned by the London Development Agency and GLA Economics, September 2003

Note: Numbers are rounded.

Conversely, if the location quotient is greater than one, then London is relatively specialised in a sector compared to the UK. According to these measures, London is specialised in industries such as financial and business services, other services and transport/communication.

There are two ways to estimate the knock-on effects that can be allocated to London:

- The national shares approach (Box 2)
- The local pattern approach (Box 3).

Figure 6. Calculating the location quotient

Note: Sector i represents any sector.

Table 7. Measuring London's specialist industries, share of jobs and location quotient

Standard Industrial Classification (SIC) group	London share of UK per cent	London's location quotient (LQ)
Agriculture/forestry/fishing	1.31	0.10
Energy/water	3.4	0.25
Mining/extraction	4.5	0.33
Manufacturing	6.4	0.47
Construction	9.9	0.71
Education/social work/health	10.3	0.77
Distribution	11.6	0.91
Public administration	13.2	0.98
Transport/communication	14.9	1.30
Other services	18.8	1.30
Finance/business	20.9	1.71
Total	**13.4**	**1.0**

Source: U Kelly, I Mc Nicoll and D McLellan, Aspects of the Economic Impact of London Higher Education Institutions, University of Strathclyde, commissioned by the London Development Agency and GLA Economics, September 2003

Box 2. The national shares approach

This approach assumes that London higher education institutions and their overseas students/visitors to these institutions purchase goods and services in London in line with London's share of UK activity in the sector being considered. This is a conservative assumption, because it is likely that purchasers in any locality are more likely to buy goods and services produced within that same locality.

For each sector, the knock-on impact on the London economy from the London higher education sector is estimated using this formula:

Impact on London sector *i* = Calculated London higher education impact on UK sector *i* X London share of UK employment in sector *i*

Box 3. The local pattern approach

This approach aims to take into account London characteristics on the supply and demand sides. London's industries have different degrees of specialisation compared with UK industries (Table 7). Therefore, this scenario allows for the possibility that London sectors could supply more or less than their pre-existing base shares because of differences in local specialisation.

London industries with a low location quotient would tend to supply less than their pre-existing base share given their low local specialisation compared to UK industries. Conversely, those industries with a high location quotient will be able to supply more.

Using the location quotient values from Table 7, the impact of industry sectors in which London does not specialise, such as Agriculture/Forestry/Fishing, Mining/Extraction and Energy/Water, is calculated as follows:

Impact on London sector *i* = Calculated total impact on UK sector *i* X London employment share in sector *i* X London location quotient value for sector *i*

For London's other sectors, such as Manufacturing, Construction, Distribution, Transport/Communications, Finance/Business, Public Administration, Education/Social Work/Health and Other services, the knock-on impact was calculated as follows:

London component of UK secondary impact on sector *i* = Calculated secondary impact on UK sector *i* X London employment share in sector *i* X London location quotient value for sector *i*

Source: U Kelly, I Mc Nicoll and D McLellan, Aspects of the Economic Impact of London Higher Education Institutions, University of Strathclyde, commissioned by the London Development Agency and GLA Economics, September 2003

Table 8 shows the main results from these two approaches.

The London higher education sector is estimated to generate £3.8-£4.6 billion of output in the London economy, which is equivalent to 2.5 to 3 per cent of total London output. The higher education sector supports between 66,700 and 75,500 full-time equivalent jobs locally, representing 1.6 per cent to 1.8 per cent of total London employment.

Higher education expenditures are weighted towards services, and the London economy has a high capacity to supply a wide range of service products.

Under the national shares approach (with no particular local preference for London), additional spending by the London higher education sector created £691 million of output and over 8,000 full-time equivalent jobs in London. Using the local pattern approach, the economic impact of London higher education in London was larger in terms of output and employment generated.

A breakdown of output and employment produced in other London industries for the two approaches is shown in Table 9. The local shares approach increases the knock-on effects for industries with location quotient values above one and reduces it for those below one. The figures for individual industries have not been rounded but it should be emphasised that they are estimates.

Table 8. The impact of London's higher education sector on the London economy

	National shares approach		Local pattern approach	
	Output £ billion	Employment FTE	Output £ billion	Employment FTE
Direct effects	3.1	58,600	3.1	58,600
Knock-on effects	0.691	8,000	1.5	16,900
Total	3.8	66,700	4.6	75,500

Source: U Kelly, I Mc Nicoll and D McLellan, Aspects of the Economic Impact of London Higher Education Institutions, University of Strathclyde, commissioned by the London Development Agency and GLA Economics, September 2003

Table 9. Impact on different sectors within the London economy

	National shares		Local pattern	
	Output £ million	Employment FTE	Output £ million	Employment FTE
Agriculture/forestry/ fishing	1.3	14	0.3	1
Mining/quarrying	4.8	12	1.6	4
Manufacturing	87.9	809	41.3	380
Energy/water	8.1	22	2.0	5
Construction	41.0	409	242.0	2,414
Distribution	75.4	1442	143.2	2,538
Hotels/restaurants	19.0	516	48.3	1,306
Transport/ communication	76.4	761	165.2	1,571
Financial services	93.6	709	194.1	1,441
Business services	210.1	2104	493.7	4,631
Public administration	33.7	678	88.2	1,803
Other services	40.1	562	58.4	827
Total	**690**	**8,000**	**1,480**	**16,900**

Source: U Kelly, I Mc Nicoll and D McLellan, Aspects of the Economic Impact of London Higher Education Institutions, University of Strathclyde, commissioned by the London Development Agency and GLA Economics, September 2003

Chapter 3.
The Value of Higher Education

Higher education is generally seen as a form of investment. However, it can also be viewed, at least partially, as a consumption good. Some people undertake higher education for their own interest. As with any good, people with higher incomes are more likely to consume more higher education than those with lower incomes. This chapter focuses on investment as the primary motive for higher education. It then considers the returns from higher education to society as a whole and subsequently to individuals.

There are two main ways of thinking about the relationship between education and earnings: human capital theory and signalling theory. Both explain the positive association between education and earnings.

Human capital theory suggests that people who invest more in education will be more productive. As a result they will earn more than less educated people. The decision to invest in education is personal and does not affect the decisions that other individuals make. However, there could be additional social benefits, as well as those to individuals.

On the other hand, signalling theory presumes that education simply signals pre-existing productivity. That is, productive people acquire more education to distinguish themselves from less productive people. The more education someone acquires, the more others will need to acquire education to signal that they are also productive. If education only signals pre-existing productivity, it is non-productive and does not contribute to economic growth.

Recently, economists have found evidence to support the view that human capital explains the positive relationship between education and earnings in the UK rather than signalling therory. This indicates that investment in higher education raises productivity and therefore increases earnings.[23] Furthermore, the finding that more educated individuals have higher earnings is a strong and robust feature across studies.[24]

Social rates of return from higher education

The social return from education is the extent to which society benefits from an increase in the overall level of education. Table 10 displays the costs and benefits from higher education to society as a whole, outside those falling on or accruing to individuals.[25]

The main costs to society of higher education are the public subsidy towards its funding and the output that is foregone as a result of people studying rather than

working. There are a number of benefits to society as a whole from education.

First, a person's accumulation of knowledge may have a positive effect on the productivity of others. This effect is known as knowledge spillover.[26]

Second, the general level of education in the workforce facilitates the discovery, adaptation and use of new technological developments. This in turn helps to expand production.

Third, higher education institutions provide a research base for the region or economy.[27] UK higher education institutions undertake important research that promotes discovery and enhances growth, and London is a world centre of research with many prestigious universities. London higher education institutions generate a quarter of UK research income, and four of the top ten higher education institutions in terms of research are located in London.

Fourth, educated people have many other effects on society. They are well positioned to be economic and social entrepreneurs and have a significant impact on the economic and social wellbeing of their communities.

Fifth, education provides social and cultural benefits to the community as a whole from the presence of graduates in a region. For instance, London higher education institutions attract students to courses in creative industries and the performing arts. The creative industries is a rapidly growing sector in London.

A rate of return is calculated by comparing the costs of an investment against the resulting benefits over time. The OECD estimates that the social rate of return from higher education in the UK, relative to upper secondary education, were 13.6 per cent for women and 15.2 per cent for men (Table 11).[28]

The social returns in the UK are large and considerably above the returns available on a risk-free investment. These estimates also indicate the UK has the highest social return from higher education among OECD countries. This appears to reflect the shorter length of university courses in the UK

Table 10. Costs and benefits to society of higher education

Costs	Benefits
Public subsidy towards education	Spillover effects on worker productivity: • When a person's education enhances co-workers' productivity.
Diversion of high quality resources	Expanded technological possibilities: • Such as those arising from the discovery, adaptation and use of new knowledge in science, medicine, industry and elsewhere. Community non-market effects: • Greater social equity, more cohesive communities, stronger sense of nationhood, slower population growth and related alleviation of environment stress, reduced risks from infectious diseases, crime reduction.

Source: A Mingat and J Tan, The Full Social Returns to Education: Estimates Based on Countries Economic Growth Performance, The World Bank, 1996

and higher graduate competition compared to many other OECD countries.

Individual rates of return from higher education

At UK level

Returns from higher education in terms of higher wages for those with degree level qualifications increase the incentive for individuals to undertake higher education.

Research has found that the average rate of return from an extra year of education over 1993 to 2001 was around 9 per cent for women and 8 per cent for men.[29]

The numbers in Table 12 are generally in line with other studies that have calculated average returns to higher education in the UK, ranging from 3 to 9.3 per cent for women, and from 3 to 15.2 per cent for men. These estimated returns to education refer to the impact on wages of an additional year of education. They do not measure the extent to which returns to education can vary with the level of qualifications achieved, type of subject or age.

By qualification level

Figures 7 and 8 display estimated returns to education by level of qualifications for women and men for different years, relative to individuals with no qualifications. For both men and women a degree generates a higher return than lower level qualifications. There has not been a fall in the returns to a degree over the 1990s, despite the increase in the proportion of the population with degrees in this period. This suggests demand for graduate level skills has increased in line with this expansion in supply. It is possible that future increases in supply might outstrip any increases in demand reducing rates of return to degrees for the individual.

Table 11. Social rates of return from higher education, 1999/2000

	Women	Men
	%	%
Canada	7.9	6.8
Denmark	4.2	6.3
France	13.1	13.2
Germany	6.9	6.5
Italy	N/A	7.0
Japan	5.7	6.7
Netherlands	6.3	10.0
Sweden	5.7	7.5
United Kingdom	13.6	15.2
United States	12.3	13.7

Source: OECD, Education at Glance, 2003

By subject

There is also evidence of different returns from higher education depending on the degree subject (Figure 9).[30] Subjects such as medicine, law and economics offered higher returns for both women and men compared to arts, education and other social sciences subjects.

By age

Age is an important factor in determining returns from higher education. All other things being equal, the rate of return to an investment made while an individual is young is higher than the rate of return to an investment made at a later age. This is because the younger the individual who participates in higher education, the longer they have to recoup that investment before retirement from the labour force. The next chapter looks at participation in higher education by age in London.

At London level

The studies mentioned above focus on the returns to higher education in the UK as a whole. There is a lack of information about returns to higher education in London. There are reasons to believe they may be different from the returns to the UK. For example, the costs of studying in London are significantly higher than costs of studying outside London (the main difference being higher accommodation costs).

Although students studying in London live at home more often than students studying elsewhere, which tends to reduce costs. In particular, students from lower income households in London often live with their

Table 12. Estimated returns from an additional year of education in the UK

Studies	Women		Men	
	Ordinary least squares method	Instrumental variables method	Ordinary least squares method	Instrumental variables method
	%	%	%	%
Deaden (1998)	8.3	9.3	4.8	5.5
Harmon and Walker (1995)	–	–	6.1	15.2
Harmon and Walker (1997a)	–	–	4.1	14.0
Hildreth (1997)	5.0	–	5.0	–
Miles (1997)	Approx 3	–	Approx 3	–
Brown and Sessions (1998)	–	–	10.8	–
Bell (1996)	4.6	–	4.6	–
Harmon and Walker (1997b)	–	–	5.1	9.9

Source: Reproduced from I Walker and Y Zhu, The Returns to Education: Evidence from the Labour Force Survey, Research Brief 313, Department of Education and Skills, November 2001

Figure 7. Returns to higher education for men

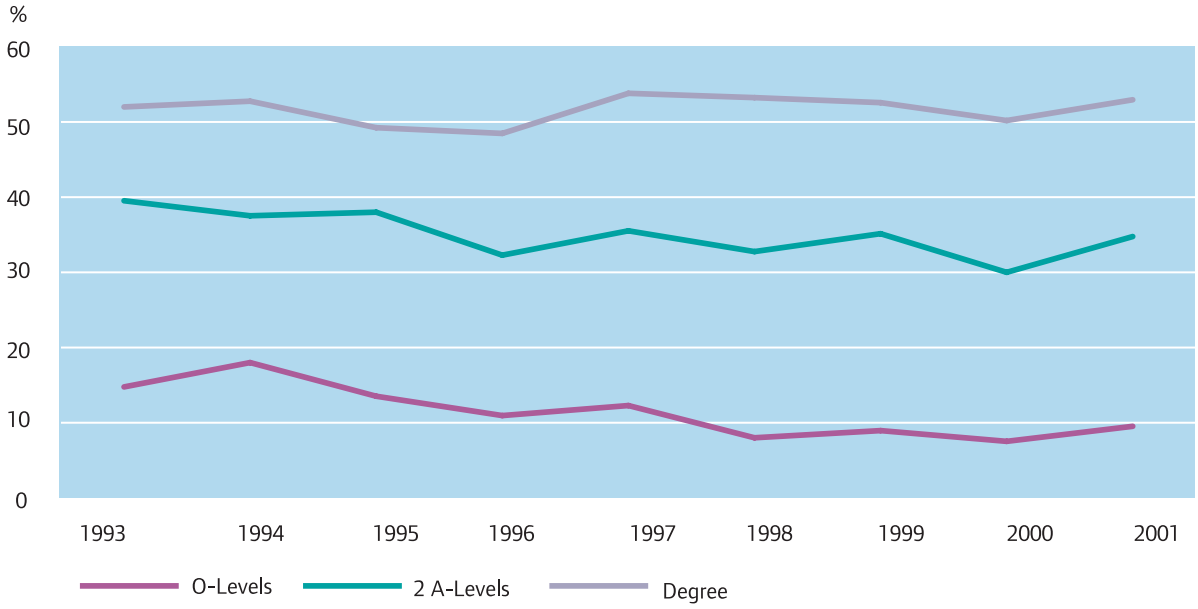
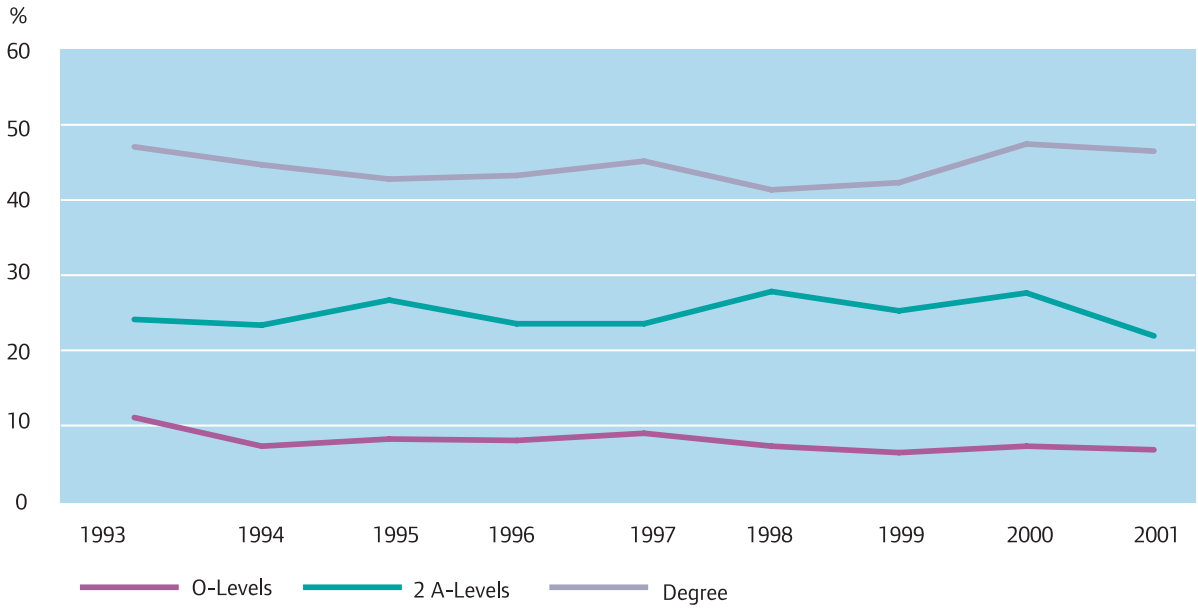


Figure 8. Returns to higher education for women



Source: Reproduced from I Walker and Y Zhu, Education, Earnings and Productivity: Recent UK Evidence, Labour Market Trends, Office for National Statistics, March 2003, Figure 2

Note: Relative to having no qualifications.
The sample excludes people from Scotland, immigrants, people under 25 and above 59, and the self-employed.

parents, and by studying locally they can reduce their accommodation costs.[31]

However, the London wage premium (the extent to which wages in London exceed those outside) increases as people move up the occupational structure. This suggests the returns to higher education might be higher in London. But there is a conceptual problem with estimating returns to higher education in London – how to treat people who studied outside London, but are working in London after graduation, and the reverse.

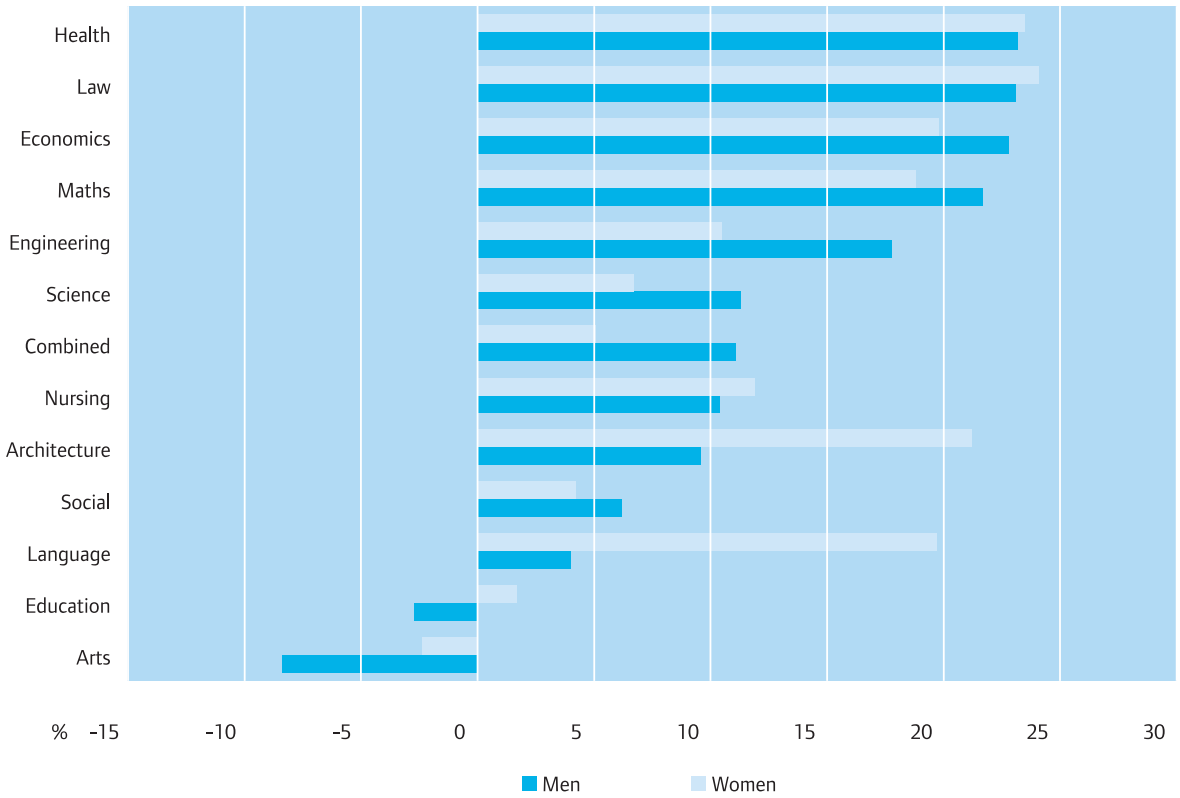
Measuring the impact of human capital in London

In order to gain a picture of returns to higher education for London, GLA Economics has estimated the value of the human capital supplied by the higher education sector in London. While no method currently exists that can provide a full estimate, it is possible to make some illustrative calculations based on assumptions and broad data.

Several approaches can be considered.[32] One way is to estimate how much more a person is likely to earn with certain graduate qualifications than without them. Using this approach, it is possible to put a monetary value on the human capital created in London.

Using information on the average yearly number of

Figure 9. Returns to higher education, by subject



Source: I Walker and Y Zhu, Education, Earnings and Productivity: Recent UK Evidence, Labour Market Trends, Office for National Statistics, March 2003

Note: Returns to a degree in this subject area relative to having at least two A-levels

graduates from London higher education institutions and the rates of return from higher education, its is possible to estimate the value of the human capital generated by the London higher education sector for the London and UK economies.

Around 66,000 students graduate from London higher education institutions each year,[33] and around 57 per cent remain in London to work. The employment rate of graduates in London is 87.5 per cent so it is assumed that, on average, graduates in London work for 87.5 per cent of their working lives. In an average year around 33,000 out of the 66,000 new graduates will be working in London.

The average annual salary in London for individuals with degree level qualifications is around £35,800. This is a reasonable proxy for the average annual salary that a graduate working in London will earn over their working life. The rate of return from an additional year of education in the UK is around 9 per cent for women and 8 per cent for men. The rate of return for a three year degree is 27 per cent for women and 24 per cent for men, or around 25 per cent overall. In other words, graduates are assumed to have a wage premium of 25 per cent more than they would earn if they had not attended university. With an annual average graduate salary in London of £35,800, the wage that individuals on average would have got without going to university is around £28,600. Therefore, the wage gain accruing to graduates working in London is approximately £7,200.

Multiplying this wage gain of £7,200 by 33,000, the additional number of London graduates working in London, gives a gain to output of around £236 million per year. Each new graduate is assumed to work for 40 years. In calculating the output gains from an average annual flow of new graduates in London, growth in real wages over time must be allowed for, and the gains to output are discounted to get a net present value figure. Long-run productivity growth in the UK economy has tended to average around 2 per cent per year over the post-war period. Economic theory suggests that real wages should rise in line with productivity. As a result, real wages are assumed to rise, on average, by 2 per cent per year. An annual discount rate of 3.5 per cent is used in accordance with current Treasury investment appraisal guidance. Based on these figures, the human capital generated each year by London higher education institutions, assuming a 40-year working life for graduates, adds around £7.2 billion to London.

As noted above, not all graduates from London higher education institutions decide to work in London. Some find jobs elsewhere in the UK or abroad, so part of the human capital generated by London higher education institutions benefits the rest of the UK and the rest of the world. There is no detailed information on wages levels, rates of return and other variables needed to estimate the value of the human capital of those working outside the UK. Hence, a simplifying assumption is made that treats all graduates working outside London as if they were working in the rest of the UK. On this basis, and using the same approach as outlined above for London, the benefit falling outside of London of the human capital generated on average each year by London higher education institutions is estimated at around £4.5 billion. In total, the human capital created by London higher education institutions in 2001/02 produced around £11.7 billion of output.

These estimates are based on a number of assumptions, and should be considered as

broad estimates rather than precise figures. The estimates are also conservative for a number of reasons. The approach only looks at the gains to workers in the form of higher wages when employers may also benefit from the higher productivity of workers in the form of increased profits. It is assumed that the wages of both graduates and non-graduates rise by 2 per cent per year. Implicitly this assumes that technological progress benefits workers at all skill levels equally. There is considerable evidence that in the last 20 years or so, technological progress has benefited people with higher skills more than those with low skills. If these trends were to continue, then graduates' wages would grow at a faster rate than non-graduates' wages. The wider social benefits of higher education that do not accrue to the particular individuals who have undertaken higher education studies are also not considered in this calculation. Most importantly, higher education is valued only in terms of its generation of human capital. Higher education institutions are also important generators of research and knowledge which economists have come to see as a key driver of economic growth.

London's graduates and the London contribution

The last section looked at ways of estimating the size of the contribution that London's higher education sector makes to the economy. This section looks at where graduates work or undertake further study.

Graduate retention by region

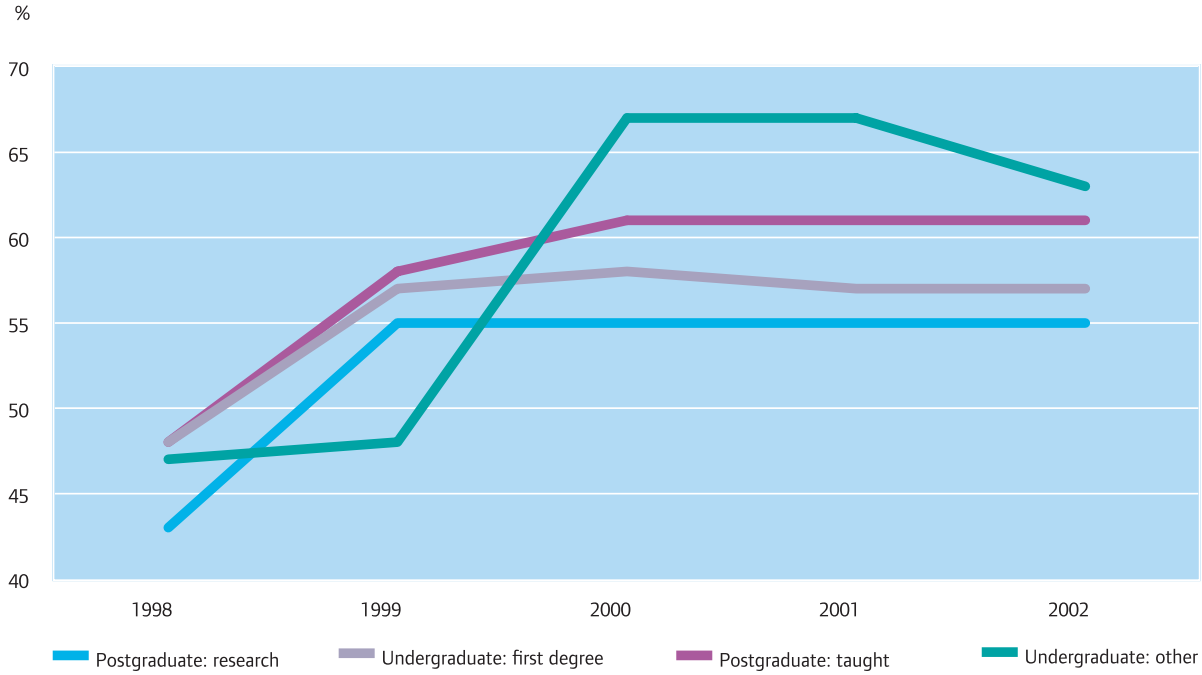
Table 13 shows the number of graduates retained in each region as well as the graduate retention rate – the proportion staying in the region to work or study. Forty-seven per cent of London graduates in 2001/02 academic year remained in the capital. The highest graduate retention rate in England but lower than Northern Ireland, Scotland and Wales.

First destination data is based on a voluntary questionnaire that asks recent graduates where they are working. It does not cover all those who gained a qualification. Therefore, figures in Table 13 are likely to underestimate the number of graduates in different regions.

Nevertheless, they indicate the relative success of London in retaining graduates compared to other regions.

Focusing only on graduates in work, the proportion of London graduates working in London has generally increased since 1998. However, in 2000 retention rates of postgraduates and first degree undergraduates remained stable and other undergraduate retention rates have fallen (Figure 10). More general analysis of the flows of people in and out of London to undertake higher education studies and to work after graduation is contained in a recent study of London.[34] It shows that in the mid-1990s, more than half of students originating from London studied outside London, but there was a substantial net inflow into London after graduation with 30 per cent of graduates' first jobs being in London – a net gain of 5 percentage points relative to the numbers of students originating from London. This inflow is a significant addition to the stock of human capital in London.

Figure 10. London graduate employment retention rate



Source: KPMG calculations based on First Destination data 2001/02, Higher Education Statistical Agency
Note: These figures are not comparable with figures in Table 13

Table 13. Graduate retention rates (including those working and/or training)

Region	Number of graduates retained	% of graduates retained[a]
Northern Ireland	4,802	71
Scotland	13,724	66
Wales	6,495	49
London	15,621	47
North East	5,129	46
North West	8,448	46
West Midlands	7,116	44
South East	11,119	42
South West	6,821	41
Yorkshire and Humberside	9,785	41
Eastern	4,828	38
Merseyside	2,228	36
East Midlands	5,835	35

Source: KPMG calculations based on first destination data 2001/02, Higher Education Statistical Agency
Note: [a] Calculation of graduate retention rates included the response of unknown.

Chapter 4.
Access and Participation in Higher Education

There is considerable interest in the ability of all groups to gain access to education which will enable them to develop their skills and abilities and improve both productivity and earnings. This chapter examines the degree of success in achieving participation in higher education for all students in London.

Measures of participation

The Department for Education and Skills measures the participation rate in UK higher education using two different measures: the Age Participation Index and the Initial Entry Rate.

The Age Participation Index considers the number of young (under 21) home initial entrants expressed as a percentage of the averaged 18-19 year-old population in the UK. (Home initial entrants are British students entering a course of full-time higher education for the first time.) The Initial Entry Rate is calculated as the number of first-year entrants aged 18-30 to full and part-time undergraduate programmes of at least one-year duration in higher education institutions and further education colleges. It is then expressed as percentage of the 18-30 year-old population. The more commonly used official measure of participation is the Age Participation Index.

UK participation rates

Figure 11 shows that participation by young people in higher education in the UK has more than doubled since the mid 1980s, from 14 per cent to 35 per cent in 2001/02. The proportion of young people going to higher education institutions started to rise in the 1989/90 academic year and the Age Participation Index rose sharply in the early 1990s. This strong pick-up appears to be related to a conscious decision by the government at the time to expand participation into higher education. In particular, the creation of new universities in 1992 pushed participation rates up during the 1990s.

Other factors could also have influenced participation rates. First, in the early 1990s the UK economy was in recession reducing job prospects for young people. Under these conditions, foregone earnings were reduced and people had a greater incentive to enter higher education rather than the labour market. Second, the early 1990s was a period of rapid growth in educational attainment so many more individuals had the qualifications necessary for university entry.[35]

The higher costs of higher education borne by individual students could have affected participation. Prior to 1997, UK full-time students did not have to pay tuition fees for

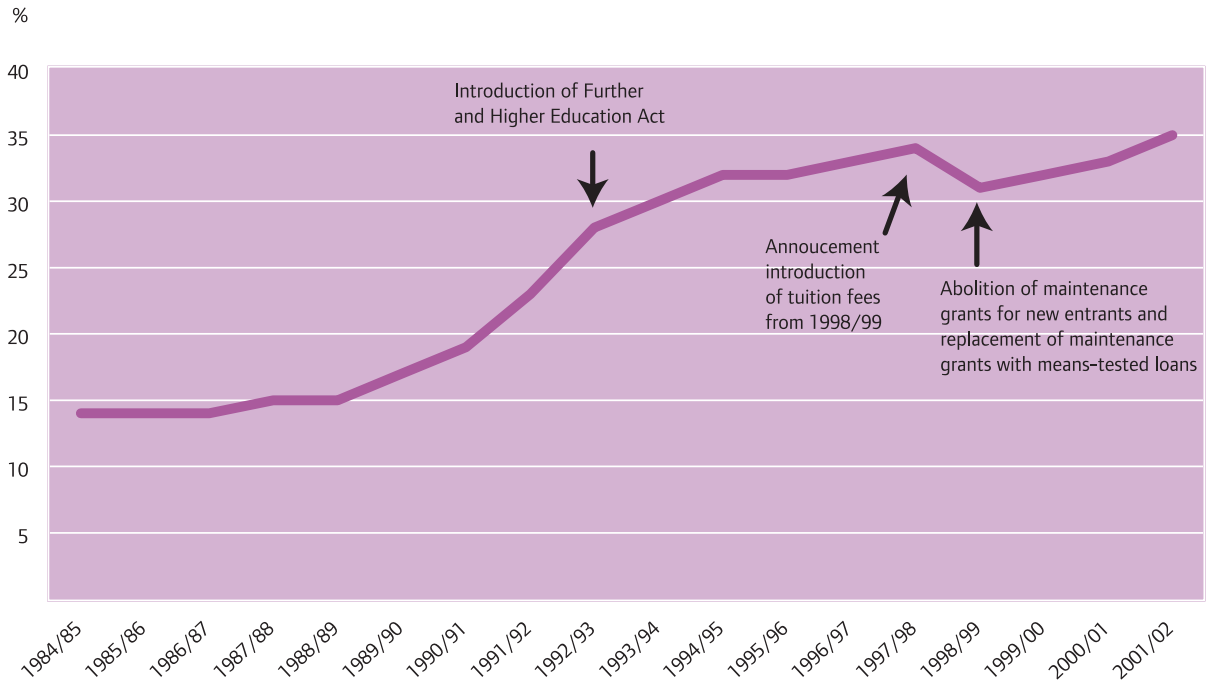
higher education degrees. Following the Higher Education Act 1998, tuition fees were introduced at £1,000 per year from 1998 and currently stand at £1,125. Furthermore, changes in student support took place in 1998 with the replacement of maintenance grants with means-tested loans. From 1998/99, loans were introduced for new entry students that became repayable after graduation once an individual earned a gross income of £10,000 a year. The reduction in financial support to students was communicated well in advance and led to more people entering higher education in 1997/98. Most of these students would have normally entered in the following academic year, and potentially contributed to the drop in student entrants in 1998/99.

The Age Participation Index has continued to rise, apart from the fall in 1998/99. It is possible that the introduction of tuition fees for higher education in this academic year had a one-off effect of deterring students from entering university or caused some students to bring forward their entry into university to avoid fees and obtain grants. Higher education participation is influenced by the costs borne by students and the ability of students to fund these costs. A key issue in this debate is whether there are different impacts on students from different age groups, ethnicity or social class backgrounds. This issue is explored later in this chapter.

London participation rates

Neither the Age Participation Index nor the Initial Entry Rate measures of participation are available at regional level from the Department for Education and Skills. For London, KPMG has calculated participation rates at a borough level using the Age Participation Index measure in higher education for the past three academic years.

Figure 11. Age Participation Index, UK



Source: Department of Education and Skills

Participation rates in both the UK and London have risen since the 1998/99 academic year. But participation rates in London are higher, and have been rising much faster than those in the UK (Table 14).

Other measures of participation

The Universities and Colleges Admission Service (UCAS) processes full-time student applications to higher education courses in the UK, including those in further education colleges.[36] Each applicant can make up to six applications to different courses and institutions.[37]

Figures on the number of accepted applicants (acceptances) in London higher education institutions by age, ethnicity and social class are available from 1996. But comparable data on acceptances by socio-economic group is only available from 2002. By looking at the number of applications, it is possible to evaluate demand for higher education, but the number of accepted applicants is a more reasonable indicator of who is actually participating in higher education in London.[38]

The Age Participation Index for London (Table 14) that is based on Higher Education Statistical Agency data is not directly comparable to UCAS data for London. This is because the Higher Education Statistical Agency data includes postgraduate and part-time students.

Figure 12 presents the number of applications through UCAS in all the regions in the UK, excluding Greater London.[39] The number of applications through UCAS outside London declined from 1997 to 2000, but started rising again in 2001.

By contrast, in London the number of applications fell more sharply than other regions following the introduction of tuition fees in 1998, and continued to decline (Figure 13).

It is possible that after the introduction of tuition fees, students have become more cost conscious. Higher costs of living in London in comparison to the rest of the country may have deterred students from applying to higher education institutions in London, and they have instead applied to institutions elsewhere in the UK.

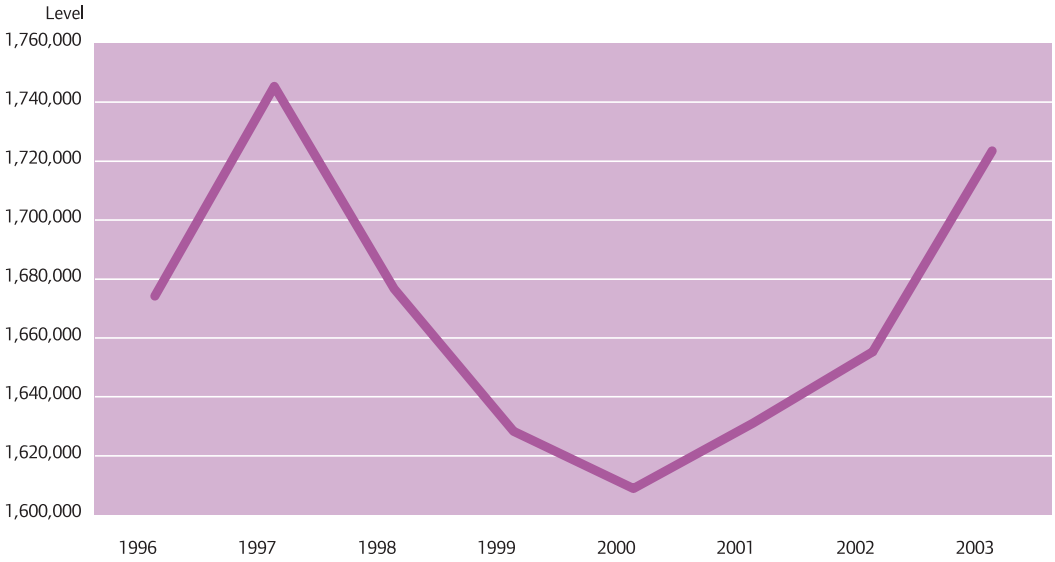
A recent study looked at the finances of students studying in and outside London between 1998/99 and 2002/03.[40] It considered single domestic students aged 25 and under, in their first year of full-time courses. The research indicated that London students living with their parents faced larger increases in their total living costs than students outside the capital. Their average expenditure rose by 31 per cent in real terms, from £5,395 to £7,957.

Table 14. Age Participation Index, London and the UK

	1998/99	1999/2000	2000/01	Percentage point change from 1998/99 to 2000/01
	%	%	%	%
London total	33.1	36.1	38.0	4.9
UK	31.0	32.0	33.0	2.0

Source: London figures – KPMG calculations from the Higher Education Statistical Agency's Student Record, various years. UK figures – Department for Education and Skills

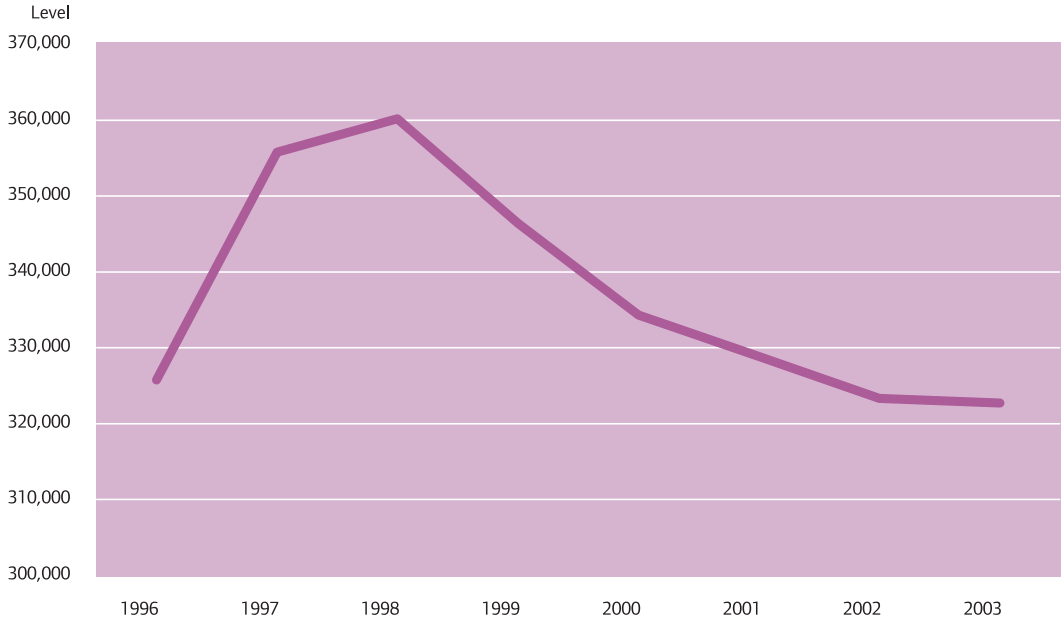
Figure 12. Number of applications, UK excluding London



Source: UCAS

Note: Data represent applications to full-time higher education undergraduate courses from home and overseas, and includes applications to further education colleges. Data exclude part-time students.

Figure. 13. Number of applications, London



Source: UCAS

Note: Data represent applications to full-time higher education undergraduate courses from home and overseas, and includes applications to further education colleges. Data exclude part-time students.

This is faster growth than London students with other housing arrangements (an 8 per cent increase) or those students outside London in all housing arrangements. Students in London also saw a sharp increase of 66 per cent in real terms in travel costs while students outside London experienced a rise of 28 per cent. In July 2001, the Mayor of London introduced a policy to make public transport in the capital more attractive and affordable ahead of the introduction of the congestion charging.[41]

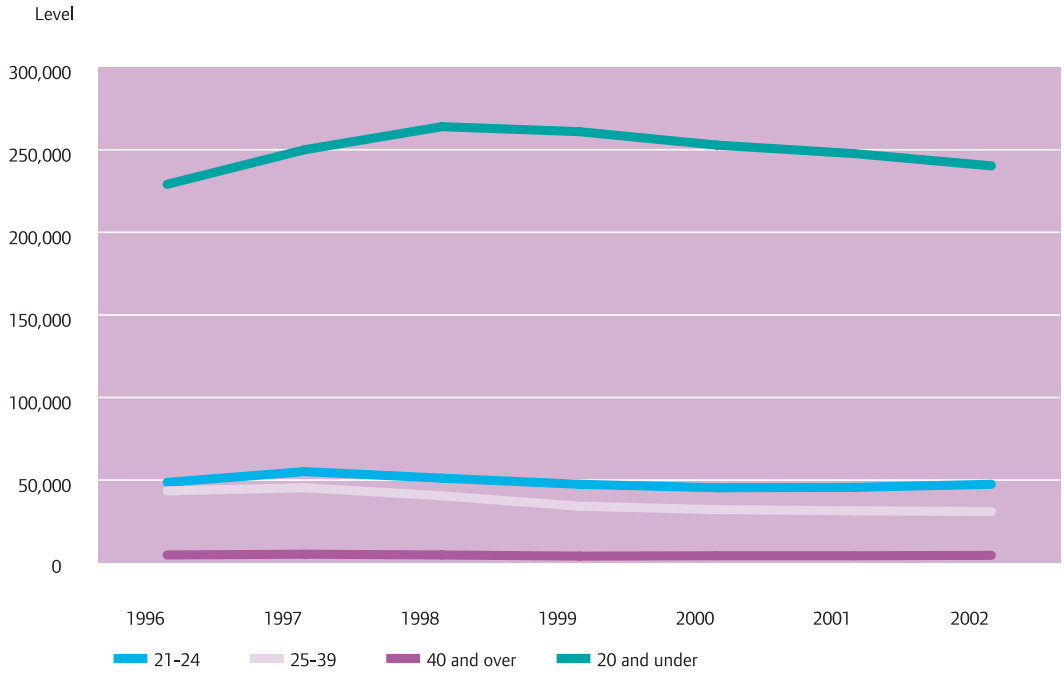
It is possible that home students aged 20 and under are the most affected by high living costs in London. Overseas students might be less affected if they receive a grant from their country of origin, and mature students are more likely to have saved money prior to entering higher education than younger students.

The number of applications to London higher education institutions by individuals aged 20 and under has fallen (Figure 14). In contrast, the number of applications from those aged 21-24 years and 40 and over have been steadily rising in recent years.

Participation in London compared with the rest of the UK

UCAS acceptances to UK and London institutions also showed a decline following the introduction of tuition fees in 1998 (Figure 15). Unlike applications to London higher education institutions, the number of acceptances began to grow again from 1999 in both London and UK institutions. This pattern is consistent with the upward trend seen in Table 14.

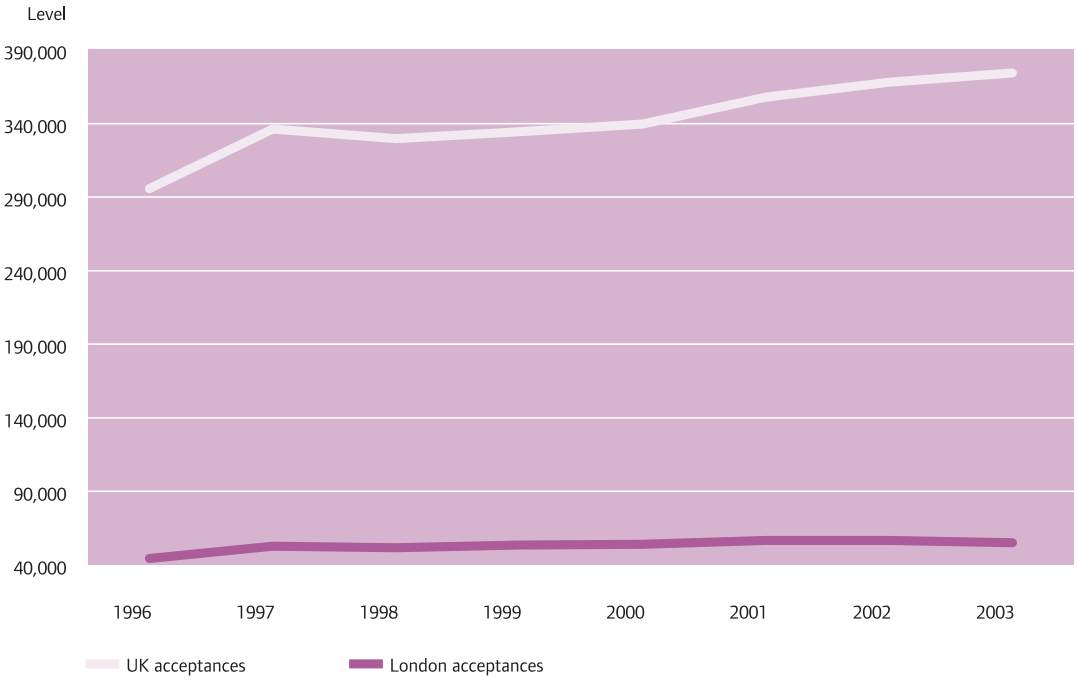
Figure 14. Applicants to London higher education institutions, by age



Source: UCAS

Note: Data represent applications to full-time higher education undergraduate courses from home and overseas, and includes applications to further education colleges. Data exclude part-time students.

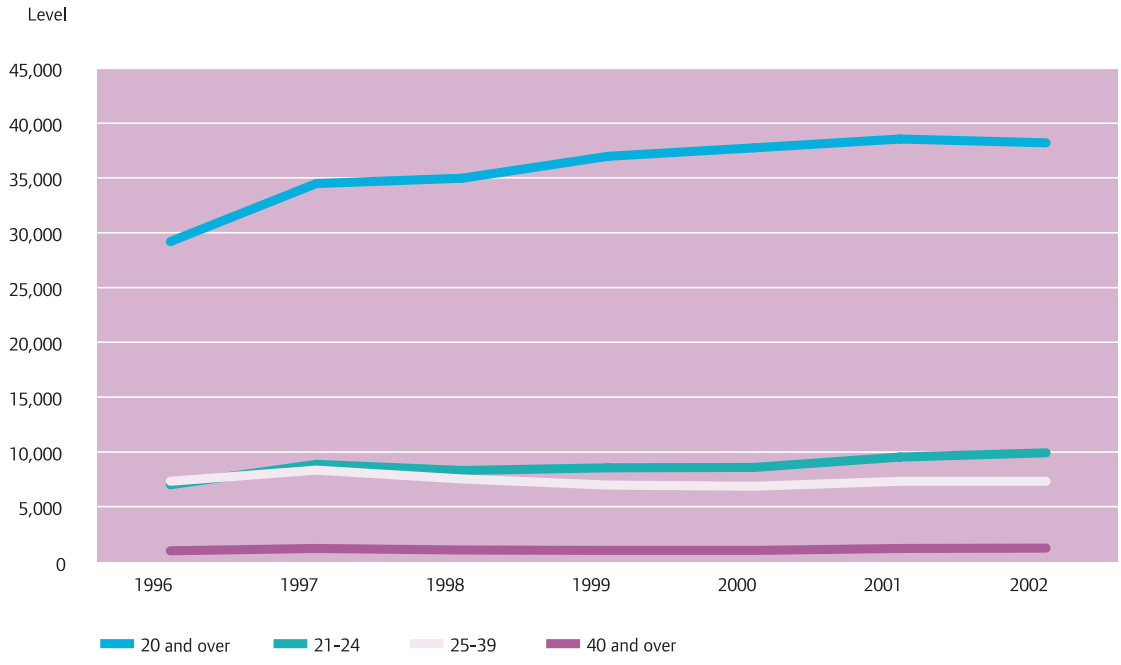
Figure 15. Acceptances, London and the UK



Source: UCAS

Note: The number of acceptances includes home and overseas students.

Figure 16. Acceptances in London, by age



Source: UCAS

Note: The number of acceptances includes home and overseas students at undergraduate level.

Participation in London by age and ethnicity

By age

Changes in the number of young people in the population would be expected to affect the number of entrants to higher education institutions. Figure 16 depicts the number of UCAS accepted applicants to London institutions by age.

UCAS acceptances increased for all age groups in 1997 when the introduction of tuition fees was announced. They edged down in 1998 when the fee was actually introduced. In later years, the number of accepted applicants to London institutions has generally been increasing, with the exception of people aged 20 and under which fell slightly in 2002.

Table 15 displays the shares of each age group for entrants to London higher education institutions between 1996 and 2002. Clearly, the majority of the accepted applicants are young: individuals 20 and under accounted for more than two-thirds of total accepted applicants to London higher education institutions in 2002.

The proportion of people aged 20 and under accepted by London institutions declined between 2000 and 2002. In general, the age structure of acceptances by London higher education institutions has remained reasonably stable. The most notable features are an increase in accepted applicants aged 21-24 and a decline in those aged 25-39.

By ethnicity

London higher education institutions take a much higher share of students from ethnic minority groups in comparison with the other regions and countries of the UK (Table 16). More than half of all black students studying in UK higher education institutions are at London institutions, and more than a third of all Asian and other ethnic minority origin students study in London.

These regional disparities are not surprising given that London's population has a greater ethnic diversity than other parts of the country. Research has shown that ethnic minority students studying in London higher education institutions tend to cluster in a small number of universities, especially the new universities (those given university status in 1992). Sixty per cent of all full-time undergraduates at London's

Table 15. Proportion of acceptances in London, by age

Year	20 and under	21-24	25-39	40 and over	Total
	%	%	%	%	%
1996	66	16	16	2	100
1997	65	17	16	2	100
1998	67	16	15	2	100
1999	69	16	13	2	100
2000	70	16	13	2	100
2001	68	17	13	2	100
2002	67	18	13	2	100

Source: UCAS

Note: The number of acceptances includes home and overseas students at undergraduate level.

Table 16. UK higher education students, by ethnic group

Region	White[a] %	Black %	Asian %	Other Minority %	Unknown %	Total number
London	11.4	54.4	34.3	38.0	15.0	334,675
North East	4.8	1.3	3.0	4.1	2.5	
Yorkshire and Humberside	9.8	4.7	8.6	6.3	7.8	
North West	8.1	3.4	7.6	6.2	7.3	
Merseyside	2.4	1.0	1.4	1.9	3.6	
East Midlands	6.3	4.7	8.1	5.7	5.2	
Eastern	5.6	6.2	6.3	6.4	3.7	
South East	17.5	10.5	9.1	12.4	24.3	
South West	7.3	2.0	3.0	4.3	3.8	
West Midlands	7.0	7.9	11.7	6.4	9.6	
Scotland	10.6	1.9	4.2	4.3	9.8	
Wales	6.6	1.8	2.6	3.4	2.7	
Northern Ireland	2.5	0.1	0.3	0.4	3.6	
Total UK %	100	100	100	100	100	
Total number of students	1,487,368	76,721	181,821	41,670	298,497	2,086,077

Source: Students in Higher Education Institutions, 2001/02, Higher Education Statistical Agency

Note: Includes full-time and part-time and postgraduates in the UK. Total number in London does not include Royal Holloway University as the Higher Education Statistical Agency locates it in the South East region.

[a] Columns, not rows, sum to 100 per cent.

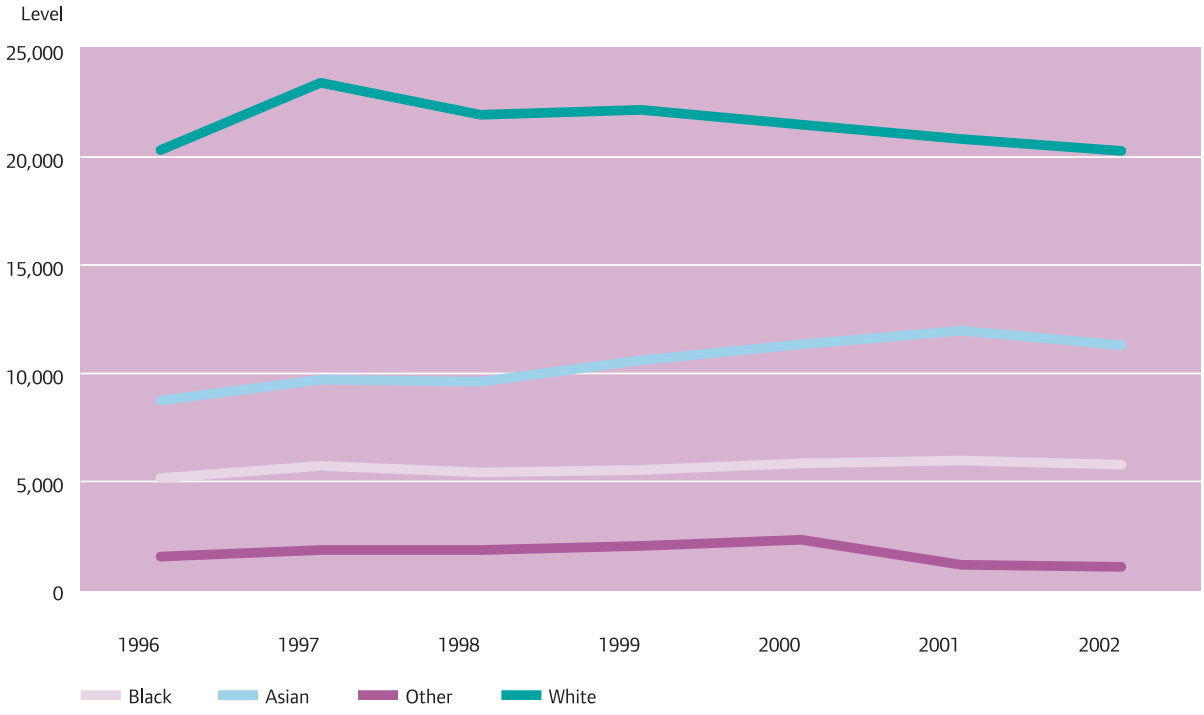
new universities are from an ethnic minority group compared to 36 per cent at the older (pre-1992) universities.[42]

Following the introduction of tuition fees and the abolition of grants in 1998, the number of white students entering higher education has declined unlike students from other ethnicities (Figure 17). Between 1998 and 2002, the number of white students accepted into London institutions has fallen by 7.6 per cent. By contrast, in the UK as a whole the number of acceptances of white students over the same period rose by 7.7 per cent. Unlike London, the number of accepted applicants across the UK has continued to increase in 2002.

In 2001, around two-thirds of London's population aged 16-24 were white, a fifth were Asian and one in nine were Black.

The proportion of white students entering higher

Figure 17. Acceptances in London, by ethnic group



Source: UCAS

Note: Includes only UK undergraduate students (not overseas students).

Table 17. Young higher education students in London, by ethnic group

Ethnic group	London students[a]		Londoners aged 16-24[b]
	1996 %	2002 %	2001 %
White	56.9	50.6	64.3
Black	14.4	14.4	11.5
Asian[c]	24.5	28.2	20.2
Mixed	N/A	4.1	4.0
Other	4.3	2.6	-
Total	100	100	100

Note: [a]UCAS which includes only UK students (not overseas). [b]Census 2001 which includes UK and overseas students.
[c]Asian includes Asian – Pakistani, Indian, Bangladeshi, Chinese and other Asian – and Asian British.
Those responding unknown were excluded.

education in London is lower than the overall proportion of London's young white population. By contrast, Asian and Black students are over-represented in relation to their share of London's young population (Table 17).

Overall, the lack of UCAS data prior to 1996 makes it difficult to draw any conclusion about the impact of tuition fees on participation in higher education in London. However, recent research based on comprehensive data on student finances from 1998/99 and 2002/03 surveys has shown that the introduction of tuition fees in 1998 and changes in student loans have affected participation in higher education in London.[43] Since the Government's reforms of student support in 1998, the costs of being a student in London have risen sharply. Also, students graduating from a university in London in 2002/03 were nearly £2,000 more in debt than those graduating from universities outside London.

Intergenerational inequalities

Participation by social class in the UK

As discussed earlier, participation in higher education has been increasing strongly since the early 1990s. But has this rise been reflected equally across all social classes? Research suggests that higher education applicants from poorer backgrounds tend to apply to shorter courses in response to increasing costs of higher education.[44]

Table 18 compares the participation rates in higher education by social class in 1991/92 and 1998/99. It shows that at the end of the 1990s, only around 13 per cent of children from the lowest social class entered higher education compared to 72 per cent of children with parents from professional backgrounds.[45] Entrants to higher education from professional or intermediate backgrounds were represented more strongly than those from the lower social classes. All social classes have experienced an increase in participation rates between 1991/92 and 1998/99, but the growth in participation has been higher among

Table 18. Higher education participation by social class, UK

	1991/92	1998/99	Change
	%	%	%
Professional	55	72	17
Intermediate	36	45	9
Skilled non-manual	22	29	7
Skilled manual	11	18	7
Partly manual	12	17	5
Unskilled	6	13	7
All social classes	23	31	8

Source: H Glennester, United Kingdom Education 1997-2001, CASE Paper 50, Centre for the Analysis of Social Exclusion, 2001, Table 1

those from professional backgrounds.

Recent studies show a link between parental income and participation in higher education in the UK.[46,47] They found that the rapid expansion of higher education in the recent past has not benefited all parts of society in the UK equally. In fact, it has increased inequality with lower increases in participation for individuals from poorer backgrounds.

This has been a strong factor behind rising intergenerational inequalities. The increase in participation in higher education from students from affluent income groups, compared to students from low incomes families, has widened wage and income gaps.[48]

Table 19 shows the percentage of UK students that entered higher education by each quintile of parental income. Participation of individuals from more affluent families has grown faster compared to those from lower income families in the past 20 years.

Generally, higher education has been seen as way of combating unemployment and promoting social equality.[49] However, recent evidence indicates that educational inequality has increased over time (Table 20).[50] Growing inequality in educational attainment is one factor that reinforces the link between the earnings of children and their parents across generations. Consequently, education policy has an important impact on income equality.

This has important implications for social inclusion. First, students from poorer backgrounds appear to have lower returns to higher education compared to students from higher income families. They are more likely to be deterred by the fact that investment in higher education provides no absolute guarentee of success.[51] Second, a lower proportion of students from poorer backgrounds participate in higher education in comparison to more affluent backgrounds, and the gap between these groups has grown over time. There are also concerns that higher education will become more ethnically differentiated and polarised.[52]

Table 19. UK students entering higher education, based on parental income

	Income quintile				
Year	Bottom fifth	Second lowest	Middle	Second highest	Highest fifth
	%	%	%	%	%
1977	9	10	12	14	27
1989	10	14	16	24	38
1997	15	26	24	34	46

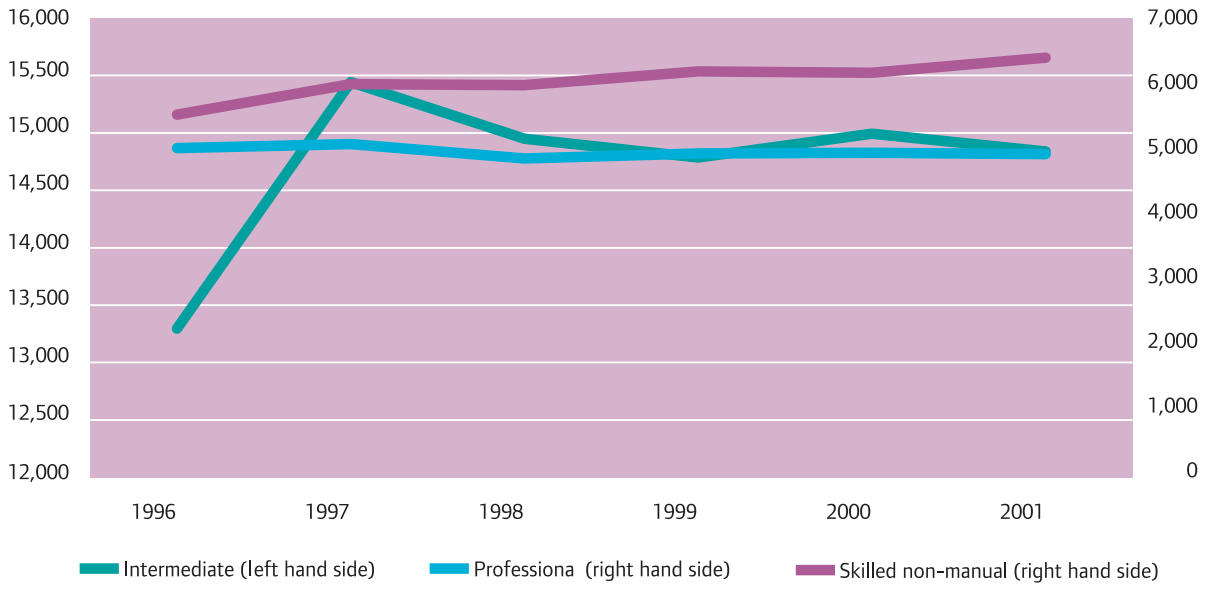
Source: S Machin and P Gregg, A Lesson for Education: University Expansion and Falling Income Mobility, New Economy, 10(4), December 2003; J Blanden, P Gregg and S Machin, Changes in Educational Inequality, CMPO Working Paper 03/079, June 2003

Table 20. Degree completion by age 23, by parental income group, UK

Cohort	Parental income			Educational inequality
	Lowest 20%	Middle 60%	Highest 20%	Difference between highest 20% and lowest 20%
	%	%	%	%
National Child Development Study 1981	6	8	20	14
British Cohort Study 1993	7	15	37	30
British Household Panel Survey 1999	9	23	46	37
Change				
1981-1993	1	7	17	16
1993-1999	2	8	9	7
1981-1999	3	15	26	23

Source: Reproduced from S Machin and P Gregg, A Lesson for Education: University Expansion and Falling Income Mobility, New Economy, 10(4), December 2003

Figure 18. Acceptances in London, by social class – non-manual groups



Source: UCAS

Note: Does not include overseas students.

Educational inequality in London

Figures 18 and 19 show the number of acceptances in London, by social class (non-manual and manual groups), between 1996 and 2001.

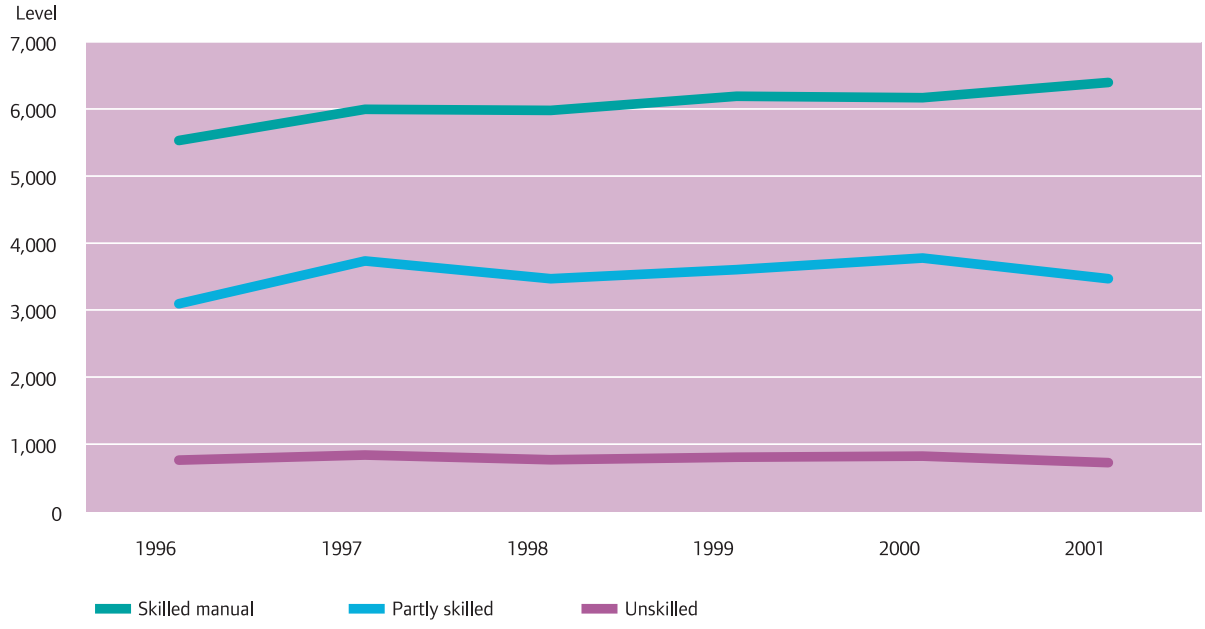
At the very least, they do not suggest any lessening in educational inequality across individuals undertaking higher education in London.

Map 1 depicts the Age Participation Index at borough level in Greater London for the 2000/01 academic year.[53] Greenwich, Southwark and Tower Hamlets have particularly low participation rates. In general, the more deprived the borough, the lower the level of participation in higher education.

Potential entrants to higher education from boroughs with concentrations of low income families, low employment and/or low qualifications appear to face more obstacles when trying to enter higher education in London. Consistent with this, other research finds significant social disparities in access to higher education in London.[54] The percentage of 18 year-olds gaining admission to universities by locality in the late 1990s showed a strong inverse relationship with the child poverty indicator from the 2000 Index of Multiple Deprivation. University entry from the poorest areas was just a quarter of that achieved from the wealthiest areas.

There are clear disparities between London boroughs in terms of participation in higher education. Fourteen of London's 33 boroughs recorded participation rates above the London average in 2000/01 academic year. Participation rates range from almost 65 per cent in Harrow to 16.5 per cent in Barking and Dagenham. Outer London boroughs tend to have higher participation rates compared to central and inner London boroughs (Table 21).

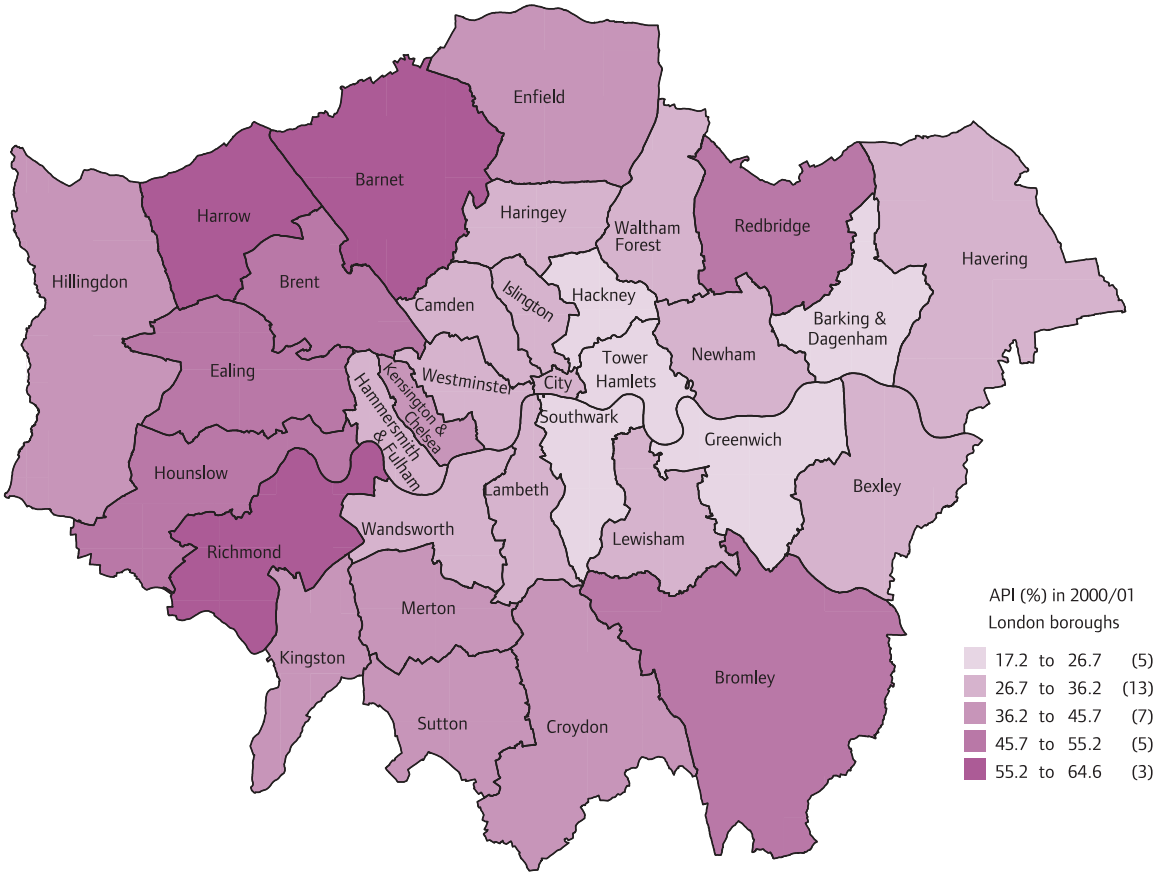
Figure 19. Acceptances in London, by social class – manual groups



Source: UCAS

Note: Does not include overseas students.

Map 1. Age Participation Index, Greater London



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Note: Based on KPMG calculations for London Aimhigher:P4P using Higher Education Statistical Agency data.
The Age Participation Index in Greater London represents the proportion of young residents living in each borough but studying anywhere in the UK.

Table 21. Age Participation Index, London boroughs

London boroughs	1998/99	1999/00	2000/01	Change from 1998/99 to 2000/01
	%	%	%	%
Barking and Dagenham	16.9	16.5	17.2	0.3
Barnet	48.3	55.5	57.7	9.4
Bexley	25.4	26.0	30.9	5.4
Brent	44.0	50.0	52.1	8.0
Bromley	34.3	44.8	46.9	12.5
Camden	29.0	28.2	28.4	-0.6
City of Westminster	25.3	28.1	28.1	2.7
City of London	32.6	37.9	28.9	-3.6
Croydon	35.6	39.4	44.4	8.7
Ealing	42.2	49.0	50.2	8.0
Enfield	36.3	40.6	43.1	6.7
Greenwich	22.1	25.5	25.6	3.5
Hackney	22.5	25.7	25.2	2.6
Hammersmith and Fulham	25.0	29.6	29.2	4.1
Haringey	32.1	31.7	35.7	3.6
Harrow	54.1	63.5	64.5	10.3
Havering	22.4	27.2	28.6	6.1
Hillingdon	34.3	35.6	37.8	3.4
Houslow	40.2	41.3	48.0	7.7
Islington	24.5	25.6	29.3	4.7
Kensington and Chelsea	30.3	37.6	39.0	8.6
Kingston upon Thames	38.5	39.8	42.7	4.1
Lambeth	25.5	26.3	28.6	3.0
Lewisham	25.2	25.7	28.2	2.9
Merton	32.8	42.3	40.7	7.8
Newham	34.3	33.6	34.1	-0.2
Redbridge	42.3	46.1	52.4	10.0
Richmond upon Thames	47.4	58.7	55.9	8.4
Southwark	23.0	23.9	24.5	1.5
Sutton	33.2	35.8	41.8	8.5
Tower Hamlets	19.8	21.5	22.8	3.0
Waltham Forest	33.2	33.0	34.5	1.3
Wandsworth	30.1	33.0	31.7	1.5
London Total	33.1	36.0	38.0	4.9
UK	31	32	33	2.0

Source: London figures – KPMG calculations from the Higher Education Statistical Authority Student Record, various years. UK figures – Department for Education and Skills

Note: These numbers have been rounded and therefore the changes in participation rate might be different from those calculated by KPMG.

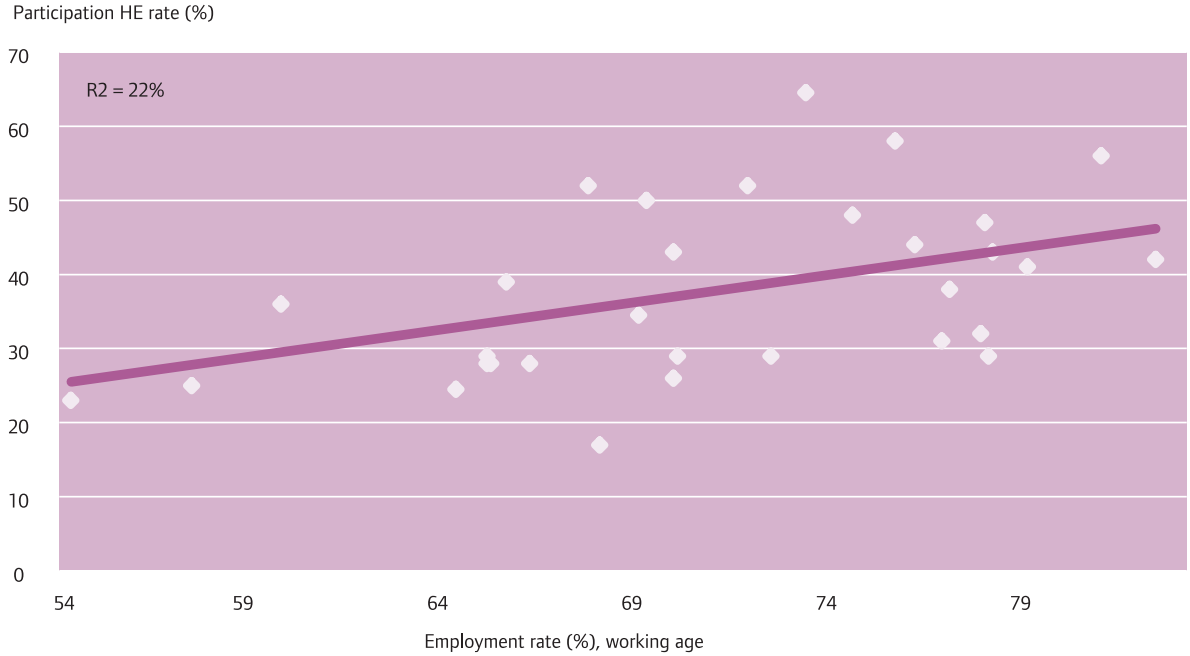
Bromley has experienced the fastest growth in participation (12.5 percentage points) of boroughs between 1998/99 and 2000/01. Harrow and Redbridge, with relatively high participation rates in relation to other boroughs, also experienced strong expansions rising by around 10 percentage points. By contrast, the City of London's participation rate has contracted by 4 percentage points over the same period.

It is to be expected that the more prosperous boroughs in London have higher participation rates, given the links between participation in higher education and parental income and social class. One way to measure prosperity is to use the employment rate (on a residence basis) of the working age population in each borough. Figure 20 indicates that there is some positive association between prosperity and participation in higher education in London.

Whether boroughs with low participation in higher education are falling further behind the more prosperous London boroughs is assessed by considering the relationship between employment and growth in participation in higher education. Figure 21 shows a mild positive association between the two.

Less prosperous boroughs have not caught up with more prosperous boroughs in terms of participation in higher education over 1998/99 to 2001/02.

Figure 20. Participation in higher education and prosperity, 2000/01



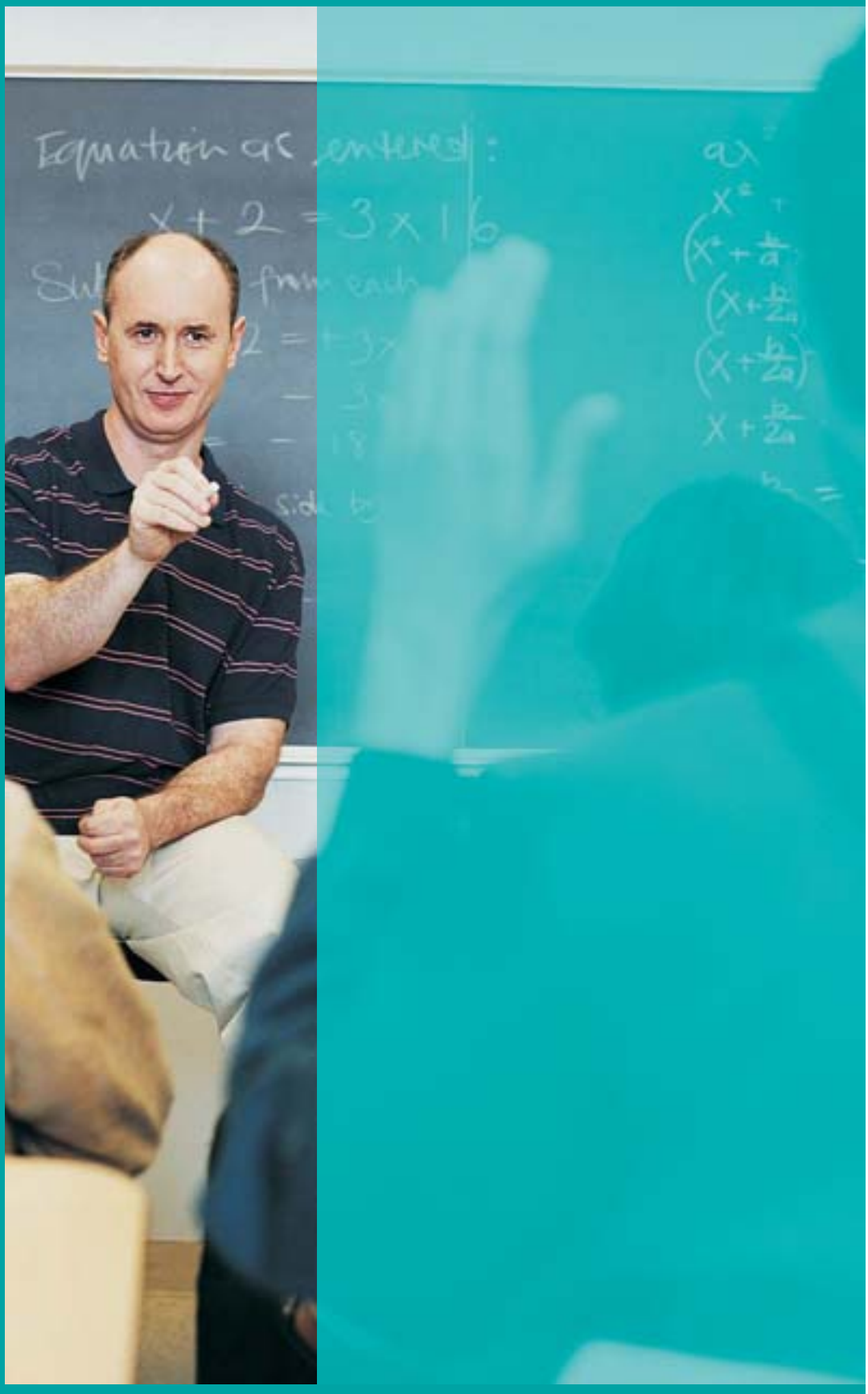
Source: Rates of HE Participation, KPMG Evidence Base for London Aimhigher:P4P, January 2003

Note: R2 measures the squared of the correlation coefficient. The higher this value, the higher the association between the variables considered.

Figure 21. Growth in higher education participation and prosperity, London boroughs

Source: Rates of HE Participation, KPMG Evidence Base for London Aimhigher:P4P, January 2003

Note: Annual data from local labour force survey is available only from 1999.


Equation
x + 2 = 3 x 16

Chapter 5:
Future Constraints Facing Higher Education in London

Supply of higher education

The supply of higher education is the number of places available for students in higher education institutions in a given academic year. As shown earlier, there are good returns from the skills aquired from taking part in higher education. Demand for skills could be expected to rise and the supply of higher education places might be expected to increase to meet this demand. However, it is only in the supply of education at postgraduate level and for overseas students that the sector operates in a free market.

At undergraduate level, the Government regulates the price of higher education. However, higher education is still subject to influence by student demand and Government decisions to invest in education strongly influence the supply.

The main factors that are likely to drive supply of higher education are:

- changes in employment in higher education institutions
- increases/decreases in infrastructure within higher education institutions
- growth in endowment and investment income of higher education institutions
- change in students' tuition fees
- mergers between higher education institutions.

Employment

As the number of students rises, higher education institutions need to employ more academic and non-academic staff. Generally, changes in employment are linked with the wages on offer in higher education institutions relative to what could be earned elsewhere in the economy. The higher the wages are in higher education institutions, the more successful these institutions are likely to be in recruiting and retaining staff.

A survey carried out for the Higher Education Funding Council for England in 2001 reported that recruitment and retention of academic staff has been deteriorating in UK higher education institutions since 1998. In 2001, one in five institutions was experiencing problems in recruiting academic staff, and for most institutions it was three times worse than during 1998.

Institutions offering subjects such as economics, law, business and management and IT faced particular problems in recruiting academics. Salaries in the higher education sector have not increased as fast as salaries in the private sector for people qualified in these areas.

It also costs more to live in London than other parts of the UK.[55] Relatively low salaries and high housing and travel costs were the major reasons behind the difficulties in recruiting and retaining academic staff in London. Low salaries also make it difficult to attract good quality young graduates to work in London higher education institutions.

Infrastructure

Investment in research equipment and libraries increases the quality of research and attracts better quality researchers and lecturers. Higher education institutions in London need to invest in their facilities to continue to compete in the global market for internationally recognised researchers and lecturers.

Sustained increases in the number of students entering higher education can require an expansion in the number of buildings. Expenditure on premises from all London higher education institutions expanded six-fold between 1997/98 and 2001/02. However, over this period there was no correlation between growth in student numbers and growth in premises costs. Other likely explanations of this rapid expansion in expenditure on premises are:

- the refurbishment of dilapidated estate in the past years
- building more halls of residence for existing students or to compete better in the overseas student market
- government initiatives such as the Science Research Investment Fund which funded large scale refurbishment over this period
- general estate consolidation/renewal programmes which began in the 1990s.

Endowment and investment income

American universities tend to expand supply if they have more investment and endowments income. Institutions with more resources are in a better position to meet increases in demand for higher education while maintaining their quality.[56]

London higher education institutions that accumulate large endowment and investment income over time would be expected to be better placed to increase student places. However, there is no general relationship between changes in the number of higher education students and the growth in endowment and investment income for London higher education institutions between 1997/98 and 2001/02. This shows that London universities do not have the same level of philanthropic support as their US counterparts.

Demographic effects

An increase in the young population raises demand for higher education. This is particularly important for London, which has a younger than average population. London's population of six to 11 year-olds is expected to grow most rapidly between 2004 and 2016.[57] In seven to 12 years, these people will be potential entrants to higher education. London higher education institutions will require increasing numbers of student places to accommodate them, or they will have to leave home to access higher education.

Financial pressures

The financial position of UK higher education institutions, including London, is assessed below. Table 22 shows the financial balance – the difference between total income and expenditure in two different given academic years.

The financial position of both UK and London higher

education institutions deteriorated between 1997/98 and 2001/02.[58] While UK higher education institutions remained in surplus between these years, London institutions showed financial fragility, moving from a surplus over total income of 3.7 per cent (in real terms) in 1997/98 to a modest deficit over total income of 0.04 per cent in 2001/02. The financial surplus of UK higher education institutions over total income declined from 2.4 per cent in 1997/98 to 0.4 per cent in 2001/02.

Not only are London higher education institutions facing higher costs today, but their spending has risen much faster than the increase in their income. Total income of London higher education institutions (in real terms) increased by 13 per cent between the 1997/98 and 2001/02 academic years, while spending increased by 18 per cent in real terms over the same period.[59]

Looking at individual London institutions, 30 out of 41 have seen their income growth outweighed by the growth in expenditure between 1997/98 and 2001/02. This financial pressure appears in different institutions independently of whether or not they increased the student numbers over this period (Figure 22). Seventeen out of 41 institutions registered a financial deficit in 2001/02. A third of these institutions are new universities.

The next section looks at the factors driving income and expenditure of London higher education institutions between 1997/98 and 2001/02. The composition of income and expenditure of London higher education institutions is also compared with non-London institutions for the 2001/02 academic year.

Table 22. Financial position of London and UK higher education institutions

	London		UK	
	1997/98	2001/02	1997/98	2001/02
	£ million in real terms			
Total income	2,846.4	3,230.6	13,243.1	14,925.6
Total expenditure	2,740.0	3,231.9	12,920.6	14,859.3
Surplus/deficit	106.5	-1.3	322.4	66.3
Financial balance over total income	3.7 %	-0.04 %	2.4 %	0.44 %

Source: Resources of Higher Education Institutions, 2001/02, Higher Education Statistical Agency

Note: The Higher Education Statistical Agency does not publish exceptional items such as selling buildings or purchasing land. This data is only available for some institutions.

Composition of income and expenditure

Teaching and research continue to be the main sources of income for London higher education institutions, representing 79 per cent of their total income (including funding council grants, tuition fees and research grants and contracts items). In contrast, most non-research or non-teaching income items have become marginally less important for London institutions since 1997/98, apart from other operating income (residence and catering operations and other property rights income).

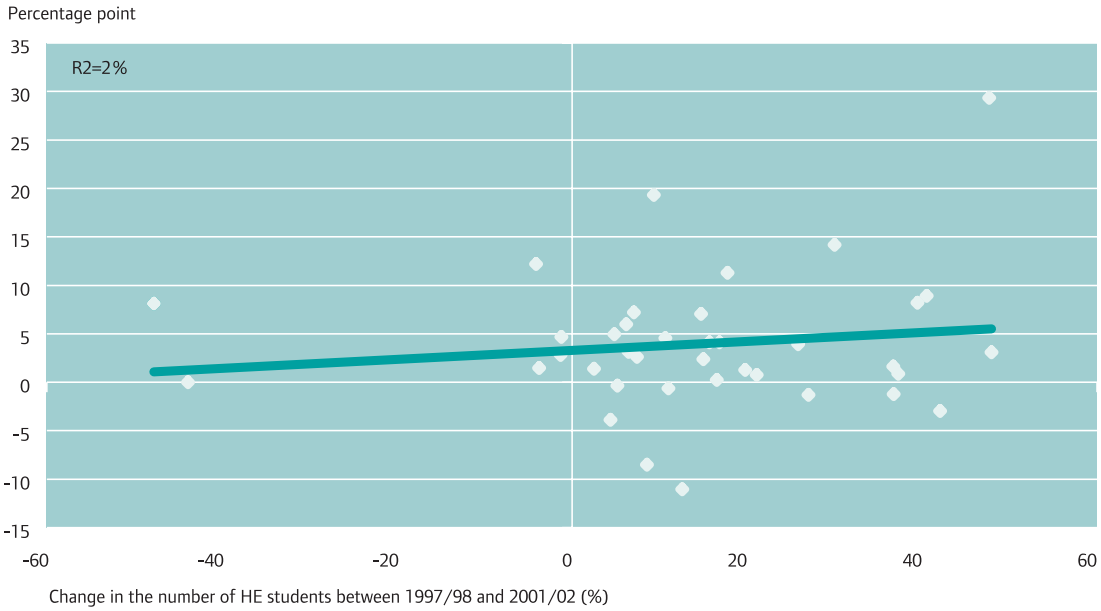
However, not all London institutions have benefited from rising income between 1997/98 and 2001/02, and disparities in income have accentuated over this period. More notably, the distribution of research grants and contracts and funding council grants has become less equal.

Spending on academic departments – largely on academic staff – accounts for about 60 per cent of total expenditure, the largest share of total spending. This is followed by direct costs attributed to administering research grants and contracts. Expenditure in all activities increased, except for other expenditure, between 1997/98 and 2001/02.

Expenditure by London institutions has also become more unequal, especially on academic departments. For example, institutions offering biological science courses have incurred higher equipment costs in comparison with universities focusing on other disciplines such as social science.

Generally, most institutions have faced a decline in some element of their income stream. For the majority of London higher education Institutions, this position has

Figure 22. The gap between growth in expenditure and income, London higher education institutions



Source: GLA Economics calculations based on Higher Education Statistical Agency data, 1997/98 and 2001/02

Note: R2 measures the squared of the correlation coefficient. The higher this value, the higher the association between the variables considered.

been compounded by rapid growth in expenditure on academic departments. There has also been a decline in income from research grants (particularly charity research funding that is mostly medical) and European Union funding.

Do London higher education institutions differ from non-London institutions?

Table 23 shows differences in resources patterns between higher education institutions in London and outside the capital.

The order of importance of different income sources in London and outside London is more or less the same, apart from other income rendered (consultancy work). This is larger in non-London institutions. Funding council grants are the most significant income source for UK institutions, followed by tuition fees and education grants, and research grants and contracts. Equally, all UK higher education institutions spend most on academic department activities, followed by research grants and contracts, other expenditure, and administration and central services expenditure

However, there are significant differences in income and spending patterns between London and non-London institutions. London institutions generate higher income and incur higher costs. Income and expenditure per student is about £9,200 in London compared with £6,500 outside London.

The composition of income and expenditure in London institutions and those outside London is different. In particular, London institutions generate higher income from funding council grants, with £3,300 per student compared with £2,600 per student for institutions outside London. Additionally, London institutions receive almost double the amount from research grants and contracts of around £1,800 per student while institutions outside London receive £1,000. Endowment income per student in London is very similar to that received outside London.

In terms of spending, London institutions incur much higher costs in academic departments, other expenditure, administration and central services, and premises per student compared to institutions outside London. Higher expenditure in academic departments could be due two factors. First, medical schools tend to pay high clinical salaries to academics and there is a concentration of medical schools in London. Second, London's high concentration of research activity is reflected in higher cost per student.

Higher administration and central services, and premises costs, reflect the higher costs of property in London. The property boom of recent years could have pushed up these costs more substantially in London than outside the capital. It is also possible that higher expenditure per student in London institutions reflects increases in investment in new or refurbished buildings.

The spending of London higher education institutions per student on residence and catering operations, and academic services, are very similar to expenditure on these items by institutions outside London.

Table 23. Income and expenditure per student, 2001/02

	London	Non-London
Total income (£ thousands):	9.2	6.5
Of which:		
Funding council grants	3.3	2.6
Tuition fees and education grants and contracts	2.2	1.5
Research grants and contracts	1.8	1.0
Other income	1.3	0.3
Other income-other services rendered	0.4	0.9
Endowment and investment income	0.2	0.1
Total expenditure by activity:	9.2	6.5
Of which:		
Academic departments	3.5	2.7
Research grants and contracts	1.6	0.9
Other expenditure	1.6	0.9
Administration and central services	1.2	0.8
Premises	1.1	0.7
Academic services	0.7	0.5
Residences and catering operations	0.5	0.4
Number of higher education institutions	41	130
Number of higher education students	340,455	1,745,630
Total income (nominal terms)	3,136,501	11,357,952
Total expenditure (nominal terms)	3,137,779	11,288,758
Surplus/deficit (£ thousands)	-1,278	69,194
Financial balance/total income (%)	-0.04	0.6

Source: Higher Education Statistical Agency and GLA Economics

Note: The Higher Education Statistical Agency does not publish exceptional items such as selling buildings or purchasing land. This data is only available for some institutions.

The future

London higher education institutions make an important contribution to the development of human capital both in London and outside the capital.

However, London higher education institutions face greater financial pressures. In order to remain competitive nationally and internationally, they require more funds.

The Department for Education and Skills estimates that 41.5 per cent of people aged 18-30 entered higher education in 2001. The Government has set a target to increase this proportion to 50 per cent by 2010.

Although high social rates of return suggest that expanding participation in higher education is a good idea, it is harder to know how to share the costs between the people taking part in higher education and society as a whole. Evidence shows that individuals typically obtain significant returns from higher education in terms of higher future wages. In addition, society gains benefits from investment in higher education which are over and above the benefits to individuals.

The issue of whether and how the costs of higher education should be shared between the students benefiting from it and society as a whole is currently the subject of much political debate.

If the costs of higher education were shared, a policy of expanding participation in higher education must bear in mind that potential students coming from poorer backgrounds are more risk averse than other students, and that education policy has an impact on income equality. The Government needs to ensure people from lower income families have more opportunities to access higher education.

Appendix A: **Notes**

1 G Becker, Investment in Human Capital: A Theoretical Analysis, Journal of Political Economy, 1962

2 B Sianesi and J Van Reenen, The Returns to Education: Macroeconomics, Journal of Economic Surveys, 17, April 2003

3 G Carlino, Do Education and Training Lead to Faster Growth in Cities?, Business Review, Federal Reserve Bank of Philadelphia, January/February1995

4 OECD, Human Capital Investment: An International Comparison, Centre for Educational Research and Innovation, 1998

5 S Gibbons, Paying for Good Neighbours? Neighbourhood Deprivation and the Community Benefits of Education, Centre for the Economics of Education, London School of Economics and Political Science, October 2001

6 The further education sector also contributes to London's economy. Some further education institutions provide higher education courses, however this report focuses on the economic contribution of higher education institutions.

7 U Kelly, R Marsh and I Mc Nicoll, The Impact of Higher Education Institutions on the UK Economy, University of Strathclyde, commissioned by Universities UK, May 2002

8 U Kelly, R Marsh and I Mc Nicoll, The Impact of Higher Education Institutions on the UK Economy, University of Strathclyde, commissioned by Universities UK, May 2002; U Kelly, I McNicoll and D McLellan, Aspects of the Economic Impact of London Higher Education Institutions, University of Strathclyde, commissioned by the London Development Agency and GLA Economics, September 2003

9 KPMG, London's Higher Education Sector: A World City Resource, commissioned by the London Development Agency, 2003

10 A rate of return is calculated by comparing the cost of an investment against the resulting flow of benefits.

11 Higher Education Statistical Agency figures for the 2001/02 academic year.

12 For an update of the number of higher education students in London (headcounts), in the 40 higher education institutions funded by the

Higher Education Funding Council for England, read the London profile at http://www.hefce.ac.uk/pubs/hefce/2004/04%5F01/default.asp.

13 Note that Royal Holloway College is located in the South East region in the Higher Education Statistical Agency data, but it is a member of London Higher.

14 A Chevalier and G Conlon, Does it Pay to Attend a Prestigious University, Centre for the Economics of Education, London School of Economics and Political Science, March 2003

15 The new universities are Kingston University, London Guildhall University, London South Bank University, Middlesex University, Thames Valley University, University of East London, University of Greenwich, University of North London and University of Westminster. Guildhall and North London merged in 2002 to create London Metropolitan University.

16 KPMG, The Demand for Higher Education in South London and the Engagment of Higher Education Institutions with the Business Community, 2003

17 The measure of size used is the number of students regardless of whether they are studying part or full time, rather than a full time equivalent measure.

18 U Kelly, I Mc Nicoll and D McLellan, Aspects of the Economic Impact of London Higher Education Institutions, University of Strathclyde, commissioned by the London Development Agency and GLA Economics, September 2003

19 A full description of the methodology used and the model specification can be found in U Kelly, R Marsh and I Mc Nicoll, The Impact of Higher Education Institutions on the UK Economy, University of Strathclyde, commissioned by Universities UK, May 2002

20 The measure of students used is a head count rather than a full-time equivalent basis.

21 This figure comes from the National Union of Students.

22 Note that research and consultancy earnings from outside the UK, particularly European Union grants and contracts, are included in the economic impact of the London higher education sector on the UK economy.

23 I Walker and Y Zhu, Education, Earnings and Productivity: Recent UK Evidence, Labour Market Trends, Office for National Statistics, March 2003

24 Sianesi and Van Reenen (2003) found compelling evidence that human capital increases productivity and earnings. Therefore, investment in human capital increases the level of economic output. However, there is still a debate on whether the accumulation of human capital leads to a sustained increase in the growth rate of GDP.

25 A Mingat and J Tan, The Full Social Returns to Education: Estimates Based on Countries Economic Growth Performance, The World Bank, 1996

26 G Carlino, Do Education and Training Lead to Faster Growth in Cities?, Business Review, Federal Reserve Bank of Philadelphia, January/February 1995

27 The International Bank for Reconstruction and Development/The World Bank, Higher Education in

Developing Countries: Peril and Promise, Task Force on Higher Education and Society, 2000

28 Many inputs are used to calculate social rates of return to higher education. Some countries might use inputs that are not measured exactly in the same way in other countries. Therefore, comparisons of social rates of return across OECD countries should be treated with care.

29 Walker and Zhu derived the resulting effect of education on wages in each year of the data. They estimate a regression where the dependent variable is the logarithm of wages on number of years of education, controlling for different characteristics in individuals such as age, region of residence, year decade of birth, having working-limited health problem, being non-white, being a union member and marital status.

30 I Walker and Y Zhu, Education, Earnings and Productivity: Recent UK Evidence, Labour Market Trends, Office for National Statistics, March 2003

31 C Callender and M Kemp, Students Studying in London: An Analysis of Data from the Student Income and Expenditure Survey 1998/99, commissioned by the Greater London Authority, 2002

32 OECD, Human Capital Investment: An International Comparison, Centre for Educational Research and Innovation, 1998

33 These numbers are based on the number of people obtaining higher education qualifications.

34 N Buck, I Gordon, P Hall, M Harloe and M Kleinman, Working Capital: Life and Labour in Contemporary London, Routledge, 2002

35 A Hodgson and K Spours, Expanding Higher Education in the UK: From in System Slowdown to System Acceleration, Higher Education Quarterly, 54, 2000

36 www.ucas.ac.uk/figures/ucasdata/summary/index.html

37 UCAS figures tend to under-represent the numbers applying to some new universities who recruit via non-traditional means.

38 The numbers of accepted applicants are close but not necessarily identical to the numbers who actually enrol, according to UCAS.

39 Before 1998, UCAS presented regional data by Standard Statistical Region, which is not comparable with Government Office Region.

40 C Callender, The Changing Finances of Students Studying in London: Evidence from the 2003/03 Student Income and Expenditure Survey, commissioned by the Greater London Authority, 2004

41 The Mayor's Transport Strategy, Greater London Authority, July 2001

42 H Connor, C Tyers, S Davis and N D Tackey with T Modood, Minority Ethnic Students in Higher Education: Interim Report, Research Report RR448, Department of Education and Skills, July 2003

43 C Callender, The Changing Finances of Students Studying in London: Evidence from the 2003/03 Student Income and Expenditure Survey, commissioned by the Greater London Authority, 2004

44 H Connor, R Burton, R Pearson, E Pollard and J Regan, Making the Right Choice: How Students Choose Universities and Colleges, Universities UK, 1999

45 S Machin, Unto That Hath, Centre Piece: The Magazine of the Centre for Economic Performance, 8(1), Winter 2003

46 J Blanden, A Goodman, P Gregg and S Machin, Changes in Intergenerational Mobility in Britain, CMPO Working Paper 01/043, 2002

47 S Machin, Unto That Hath, Centre Piece: The Magazine of the Centre for Economic Performance, 8(1), Winter 2003

48 Children of wealthier parents are more likely to participate in higher education and so they are also more likely to earn higher salaries later in life.

49 OECD, Education at Glance, 2003

50 S Machin and P Gregg, A Lesson for Education: University Expansion and Falling Income Mobility, New Economy, 10(4), December 2003

51 R Naylor, J Smith and A McKnight, Sheer class? The Extent and Sources of Variation in the UK Graduate Earnings Premium, CASE Paper 54, Centre for Analysis of Social Exclusion, London School of Economics, March 2002

52 C Callender, The Changing Finances of Students Studying in London: Evidence from the 2003/03 Student Income and Expenditure Survey, commissioned by the Greater London Authority, 2004

53 Note that the Age Participation Index at borough level gives a simplified view of reality. There are smaller areas with high participation in poorly performing boroughs and areas with low participation in high performing ones. Action to address low participation should be targeted using more detailed data, such as postcode level Age Participation Index data.

54 N Buck, I Gordon, P Hall, M Harloe and M Kleinman, Working Capital: Life and Labour in Contemporary London, Routledge, 2002

55 Oxford Economic Forecasting, Cost of Living Comparisons between London, Edinburgh and Manchester, Case for London Technical Report 3, GLA Economics, 2004

56 C Clotfelter and M Rothschild, Studies of Supply and Demand in Higher Education, University of Chicago Press, 1993

57 Greater London Authority, 2003 Round of Demographic Projections, DMAG Briefing 2004/5, February 2004

58 Some of the London higher education institutions recorded in the Higher Education Statistical Agency data for the 2001/02 academic year do not appear in the list for 1997/98. Only the 39 institutions for which data was available in both academic years were considered.

59 UK Higher education institutions are meant to make a 3 per cent surplus and The Higher Education Funding Council of England equires that higher education institutions do not run a deficit budget for more than two consecutive years.

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Chinese

中文
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Vietnamese

Tiếng Việt
Nếu bạn muốn bản sao của tài liệu này bằng ngôn ngữ của bạn, hãy gọi điện theo số hoặc liên lạc với địa chỉ dưới đây.

Greek

Αν θα θέλατε ένα αντίγραφο του παρόντος εγγράφου στη γλώσσα σας, παρακαλώ να τηλεφωνήσετε στον αριθμό ή να επικοινωνήσετε στην παρακάτω διεύθυνση.

Turkish

Bu brosürü Türkçe olarak edinmek için lütfen asagidaki numaraya telefon edin ya da adrese basvurun.

Punjabi

[illegible]

Hindi

यदि आप इस दस्तावेज़ की प्रति अपनी भाषा में चाहते हैं, तो कृपया निम्नलिखित नम्बर पर फोन करें अथवा दिये गये पता पर सम्पर्क करें।

Bengali

আপনি যদি আপনার ভাষায় এই দলিলের প্রতিলিপি (কপি) চান, তা হলে নীচের ফোন্ নম্বরে বা ঠিকানায় অনুগ্রহ করে যোগাযোগ করুন।

Urdu

اگر آپ اِس دستاویز کی نقل اپنی زبان میں چاہتے ہیں، تو براہِ کرم نیچے دیئے گئے نمبر پر فون کریں یا دیئے گئے پتہ پر رابطہ قائم کریں.

Arabic

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