



**Bournemouth
University**

Bournemouth University Economic Impact Study 2007

**The economic impact of Bournemouth University on the economies of Bournemouth,
Christchurch and Poole and the South West Region.**

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Principal Findings

- BU spent £81.384M in 2006 of which 51.1% was on wages and salaries.
- In 2007 students at BU spent £88.8M in the local conurbation and more than £98.5M in the South West Region.
- BU created direct income effects in the local conurbation (£25M), the South West (£35M) and within the UK (£44M) in 2007.
- BU Staff spent nearly £37M in 2007 and more than 60% of that spending takes place in the conurbation of Bournemouth, Christchurch and Poole.
- Students at Bournemouth University spent more than £103M and more than 86% of it has been spent in the local conurbation of Bournemouth, Christchurch and Poole.
- The total effect of BU activities on the output of the local economies of Bournemouth, Christchurch and Poole was £166M and this figure increases to £172.481M if capital spending is included.
- The impact of BU on the levels of income in Bournemouth, Christchurch and Poole was £35.126M after taking into account the secondary effects generated by the spending of the University, its students and staff (£36.1M if capital spend is included).
- BU created 1,026 FTE jobs in 2007 within Bournemouth, Christchurch and Poole and when the secondary effects are included this rises to 1,555 FTEs throughout all sectors of the local economies.
- Just under 1 FTE job is supported in the local conurbation for every 10 students at BU and it only needs 8.3 students to support 1 FTE job in the economy of the South West Region.
- The direct effect of BU spending and its students on the level of output in the South West region was £141.7M. When the secondary effects are included this rises to more than £240.8M of output.

- The activities of BU and its students increased income levels in the SW Region by almost £52M.
- The University directly employs 1,309 FTE staff within the SW region and the secondary effects result in a further 619 FTEs being supported throughout all sectors of the SW economy, making a total employment effect in the region of 1,928 FTEs.
- The economic activity supported by BU within the UK economy, if all student expenditure is included, is an increase in output of £437.5M, an increase in income levels of £131.4M and the supporting of 2,730 FTE jobs.
- The impact of BU on the UK economy, excluding the expenditure of UK students, is an increase in output of £235.7M, an increase in income levels of £91.2M and the supporting of 2,107 FTE jobs.
- In 2005/6 graduates and postgraduates from Bournemouth University have increased their lifetime earning potential by £517.3M and £682.5M, respectively.
- Over the period since BU became a university the total increase in lifetime earnings potential of its students has increased by £6,291M.

Introduction

Bournemouth University is a vital component of the local economy, injecting significant elements of demand into the economies of Bournemouth, Christchurch, Poole, Dorset and the South West Region. The University impacts on the economy in a variety of ways:

- 1) Direct expenditure on goods and services
- 2) Payment of salaries and wages
- 3) Student Expenditure
- 4) Visitors (to students and to University)
- 5) Indirect and induced expenditure as a result of the increased levels of demand
- 6) Enhancing the productivity of the local workforce through its training and research
- 7) Investment in human capital in the UK

This study examines the direct economic impacts included in 1-4 above, together with estimates of the secondary effects included in 5 above. The secondary benefits (indirect and induced effects¹) are estimated using output and income multiplier values derived from studies in local and other areas in the UK, including the Econ i² regional economic (input-output) model. The researchers have taken estimates relating to the value of a degree and postgraduate qualification over an individual's lifetime (Universities UK, 2006), item 7 above, and assumed that the labour market reflects enhanced productivity over time in the additional value associated with having a first or postgraduate degree qualification, item 6 above. The data that are available allow the researchers to estimate the value derived for UK/EU students but not degree recipients by local, sub-regional and national residency. Although this report shows the economic impact of BU's activities on the UK economy these results should be seen merely as an indicator of what effects are generated by BU. It should not be assumed that without BU the output, income and employment levels would fall by the UK recorded amounts because the UK students would be making expenditures wherever they lived in the UK and therefore the UK student expenditure cannot be considered additional. Therefore, the UK calculation includes an additional estimation which examines only the effects of the international students at BU.

¹ See Appendix for definitions

² <http://www.economicssystem.co.uk/south-west/index.php>

Methodology

This study uses the data that are available from the University accounting system for the financial year ending July 2006. Data were extracted to show expenditure on the purchase of goods and services by postcode and these were then allocated to the main geographical sub-divisions relating to the local conurbation (Bournemouth, Christchurch and Poole), Dorset (excluding the conurbation), the rest of the South West Region and then to the rest of the UK. These data were then inflated to represent 2007 price levels. Staff costs were extracted from the University accounts. An online survey was launched in order to establish the residential location of staff and their expenditure patterns in each of the areas, using postcodes. Similarly, online surveys were launched in 2007 and 2008 to determine the expenditure patterns of students (excluding payment of their fees) for each of the local economies. The two sets of results from the student survey were analysed separately and tested for any statistical differences between the data collected in 2007 and 2008. Therefore, the two data sets were adjusted for inflation and combined to make a single data set.

In this way the researchers calculated University Expenditure, by postcode, staff income and expenditure by place of residence and area of expenditure and, finally, student expenditure by place of residence and area of expenditure (excluding University fees – the inclusion of University Fees in student expenditure would have led to double counting as this sum is included in the expenditures made by the University).

Once the total expenditures by category and area were determined, multiplier values for income and output effects were estimated from a number of sub-regional and regional studies to estimate the likely size of income and output multipliers. This approach allowed the researchers to calculate the indirect and induced effects created by the expenditures made by the University, its staff and students.

The Economic Impact of BU, its Students and Staff on Each of the Geographical Regions

When the University, its students and staff spend money within an economy (be it in the local conurbation, the SW Region or the UK) it will have secondary impacts that percolate throughout all of those economic sectors that either support the University, student and staff spend directly or indirectly. These “knock on” effects are generally referred to as the secondary effects. Clearly the University will have a major impact on the local economies in the surrounding area (Bournemouth, Christchurch and Poole) because this is where the students and majority of staff reside and spend their income. However, when goods and services are bought outside the local conurbation they have impacts on other areas, such as Dorset, the South West Region and the UK economy as a whole. This study estimates the impacts on each of those geographical areas.

The impacts are shown in terms of the effects on the level of output (gross domestic product), income levels and the number of full-time equivalent job opportunities supported (FTEs). All effects are shown at 2007 prices.

University, Student and Staff (Expenditure and its distribution)

The year 2007 has been taken as the baseline of this study. Where data, such as those from BU accounts, refer to, say, 2006 they have been brought to 2007 prices using a 3% inflation figure.

For the year ending July 2006 the University's total recurrent expenditure was £81.384M and the breakdown of this expenditure is shown in Table 1. The staff costs are clearly the largest component of the University's recurrent expenditure, as one would expect in the Higher Education sector, and expenditure on goods and services follows a close second with £34.243M being spent in the 2006 financial year.

Table 1: BU Recurrent Expenditure 2006

Expenditure	£M	% of total
Staff Costs	41.621	51.1
Depreciation	4.465	5.5
Expenditure on Goods & Services	34.243	42.1
Interest Payable	1.055	1.3
Total	81.384	100.0

Thus, for the year 2007 it is assumed that BU expenditure totalled £83.826M (81.384M x 1.03).

If the £34M of expenditure on goods and services is broken down into expenditure by geographical area it can be seen that the areas defined as Bournemouth, Christchurch, Poole (the conurbation) and the rest of Dorset together account for more than 45% of the University's total expenditure on goods and services. Table 2 shows the breakdown of expenditure on goods and services by BU during the financial year ending July 2006.

Table 2: BU Recurrent Expenditure on Goods and Services by Area 2006

Area	£'s	% of total
Bournemouth	3,911,549	11.4
Christchurch	292,286	0.9
Poole	4,485,316	13.1
Dorset (excluding local conurbation)	6,751,678	19.7
Rest of South West Region	4,674,900	13.7
Rest of UK	14,127,270	41.3
Total	34,242,999	100.0

Note: The % may not sum to 100.0 due to rounding errors

The expenditure by BU students is a highly significant source of demand for the local economies and in the 2007 year this was estimated to be more than £103M (excluding fees). Using the data from the online surveys it is possible to identify the geographical spread of this expenditure. Because Bournemouth has full-time and part-time students (the latter representing a significant proportion of the total) it was decided to estimate the total expenditure associated with each group and then sum the two to determine the overall level of student expenditure. Table 3 shows how total student expenditure is distributed over each of the geographical areas.

Table 3: BU Student Expenditure by Area, 2007

Area	£'s	% of total
Bournemouth	69,832,310	67.7
Christchurch	3,134,706	3.0
Poole	15,797,430	15.4
Dorset (excluding local conurbation)	5,843,824	5.7
Rest of South West Region	3,957,939	3.8
Rest of UK	4,563,203	4.4
Total	103,129,412	100.0

The 11,498 full-time students recorded an average expenditure per year of £6,647 which translates into a total spend for full-time students of (11,498 x 6,647) £76,427,206. There were 3,902 part-time undergraduates, 432 part-time taught postgraduates and 125 part-time postgraduate research students (120 of these latter students are also staff at the University who are registered to undertake a PhD) making a total number of part-time students of 4,459. This is equivalent to 27.9% of all students registered at Bournemouth University in that year.

The total part-time students (4,459) less those part-time students who are staff (4,459 – 120 = 4,339) spent on average £6,154 per annum, yielding a total expenditure of (4,339 x 6,154) £26,702,206. This yields a total expenditure of £103.129M as shown in table 3. Comparisons between the per capita spend of part-time and full-time students reveals only a marginal difference in expenditure levels. The Student Income and Expenditure Survey conducted in 2004/5 (Finch et al, 2006) found that, on average, part-time students spent 40% more than their full-time counterparts. This was not the findings of the survey at Bournemouth but such differences are likely to be case specific because of the nature of the programmes and the characteristics of the part-time students. The average expenditure estimated by the 2004/5 study was significantly higher than the estimates derived for Bournemouth students calculated on the basis of the surveys. The decision was taken to use the data derived from the survey rather than those from the Finch study. Therefore, the BU estimates may be considered to be conservative estimates.

However, in order to estimate the impact of BU on the various economies it is necessary to consider additionality. That is, the study should only include expenditure that would not have occurred in the absence of BU. Table 3 shows the expenditure by all students at Bournemouth University during the 2007 year, whereas some of the students are local part-time students who would have been making off-campus expenditures in the area even if they had not been attending the University. Therefore, the local segment of students needs to be removed from the total expenditure estimate before the direct additional student expenditure can be examined. In order to calculate the local student numbers some broad assumptions have to be made.

According to the online survey 26% of the full-time students normally reside in the conurbation Bournemouth, Christchurch, or Poole. Whereas the corresponding figure for part-time students was 52.3%. This translates into

5,325 full- and part-time students living in Bournemouth, Christchurch and Poole.

The issue of whether or not we should discount those students that would have been living in Bournemouth, Christchurch and Poole irrespective of whether or not they were registered for a BU degree is not an easy question to answer. It can certainly be argued that had BU not been in existence the 2,989 full-time students would have gone elsewhere in the UK to pursue their degree and so there is additionality associated with their expenditure. The question of the part-time students is somewhat different because many of them are working and may have continued to live in the area even without the University. It is assumed for the purpose of this study that 33% of part-time students normally resident in the conurbation would have moved elsewhere in the absence of the University. Therefore, the final breakdown of additional part-time students to be included in this study is 2,895 part-time students whose expenditure can be considered additional to the conurbation.

Tables 4 and 5 show the numbers of students and their expenditure derived from the online surveys, by area and by full-time (4) and part-time (5). The number of part-time students included in table 5b has been reduced to reflect the above assumptions regarding the additionality of part-time local students.

Table 4: Expenditure of full-time students, by area of residence, 2007

Place of term-time residence	No. Students	% of total spending	Expenditure (£s)
Bournemouth	8,394	73	55,791,860
Poole	1,794	15.6	11,922,644
Christchurch	103	0.9	687,844
Dorset	701	6.1	4,662,060
South West	207	1.8	1,375,690
Rest of UK	299	2.6	1,987,107
total full-time students	11,498		
Total spending by full time students			£76,427,206

Table 5: Expenditure of “additional” part-time students, by area of residence, 2007

Place of term-time residence	No. Students	% of total spending	Expenditure (£s)
Bournemouth	492	26.9	3,027,768
Poole	141	7.6	867,714
Christchurch	141	7.6	867,714
Dorset	215	11.7	1,323,110
South West	424	23.1	2,609,296
Rest of UK	424	23.1	2,609,296
Total number of part time student	1,837		
Total spending by part time students			£11,304,898

Therefore, the direct expenditure associated with Bournemouth University is as follows:

Table 6: University and Student Expenditure, 2007

Nature of spending	£M
University	83.826
Student Expenditure	103.129
Total	£186.955

In addition to this injection of aggregate demand, a proportion of the students coming to Bournemouth University are likely to be visited by family and friends who will make expenditures in the local economy. Assume that only the Home/EU full-time students generate such VFR traffic (9,971) and that, say, only 20% of students are brought to the University or receive visits from family and friends (which also takes into account the fact that 26% of students have their normal residence in the conurbation). This suggests that if only 1,994 students are visited by their parents/friends ($9,971 \times 0.2$) and with an average party size of 2 ($1,994 \times 2 = 3,988$ visitors) and visiting 6 times per academic year resulting in 23,900 visitor days. Using the latest estimates of day visitor expenditure to Bournemouth at £10.87 per person per day provides an estimate of £260,286 for VFR spend. Thus, the total **direct** increase in aggregate demand for goods and services is £103.389M *plus* the University’s £83.826M which totals **£187.215M**.

BU Staff Expenditure by Geographical Area

During 2007 staff at BU spent approximately £36.866M of their earnings. The distribution of that expenditure by geographical area is shown in table 7. It can be seen that the majority of the expenditure (60.3%) was made within Bournemouth, Christchurch and Poole. However, many elements of this expenditure are difficult to allocate to a geographical region (expenditure on utilities, mortgage payments, licenses, etc).

Table 7: BU Staff Expenditure by Area 2007

Area	£'s	% of total
Bournemouth	13,932,965	37.79
Christchurch	2,049,015	5.56
Poole	6,251,071	16.96
Dorset (excluding local conurbation)	5,810,714	15.76
Rest of South West Region	3,399,041	9.22
Rest of UK	5,422,990	14.71
Total	36,865,796	100.00

University Direct Income Effects

In addition to its expenditure on goods and services, Bournemouth University spends a significant sum of money on salaries and wages for its staff (51.1%). In 2006 the University spent £41.621M on staff costs of which £34.888M was actually paid out as salaries and wages. When the economic impact of these staff costs are calculated at the local and regional level, the add-on costs that go to central government will be deducted and attention is focused on the amount of expenditure that staff make within each of the geographical regions to measure the true economic impacts.

Table 8: Direct Income by Geographical Area, 2007

assuming 3% growth and UK includes staff costs		
B,C & P Conurbation	South West Region	United Kingdom
15,309,820	15,309,820	15,309,820
2,650,942	2,650,942	2,650,942
7,080,581	7,080,581	7,080,581
£25,041,343	8,280,512	8,280,512
	1,716,954	1,716,954
	£35,038,809	9,295,287
		£44,334,096

University Direct Employment Effects

The University employed 1,372 full-time-equivalent (FTE) staff in 2006 and 1,026 of them lived in Bournemouth, Christchurch and Poole. This is the direct employment effect of Bournemouth University. Thus the direct employment effect of BU in the local conurbation is 1,026 FTEs and at the UK level the direct effect is 1,372 FTEs.

The Economic Impact of Bournemouth University on the Economies of Bournemouth, Christchurch and Poole Conurbation

Output

Bournemouth University and its students spend £109.612M within the local conurbation. This is a significant amount of aggregate demand being injected into the conurbation. A further £38.024M of output is generated as a result of the indirect effects on the conurbation and the induced effects add a further £18.513M to the total impact. Thus, **the total effect of Bournemouth University on the output levels of the Bournemouth, Christchurch and Poole conurbation amounts to £166.149M.**

Table 9: The Output Effects of the University, Staff and Student Expenditure on the Economies of Bournemouth, Christchurch and Poole.

(Students, University and Staff)				
	Direct	Indirect	Induced	TOTAL
	£'s	£'s	£'s	£'s
B,C & P Conurbation	109,611,679	38,024,291	18,513,413	166,149,383

If capital expenditure is included in the analysis the £166.149M increases to £172.217M assuming that the distribution of its expenditure is geographically similar to the current expenditure. Given that a large proportion of the capital spend was on building and construction then this may not be an unrealistic assumption and may even be considered conservative.

Income

As identified in Table 10, the University paid salaries and wages amounting £25.041M to staff residing in the conurbation area of Bournemouth, Christchurch and Poole. This is the direct income effect of the University within the local economy. The indirect effect of expenditure by the University and its students in the area generates an indirect income effect of £6.544M for residents of the conurbation. The induced effect, when the income that is earned within the local economy is re-spent on goods and services, adds a further £3.540M. **Therefore, the total income effect for the conurbation is £35.126M.**

Table 10: The Income Effects of the University, Staff and Student Expenditure on the Economies of Bournemouth, Christchurch and Poole.

	Direct	Indirect	Induced	TOTAL
	£'s	£'s	£'s	£'s
B,C & P Conurbation	25,041,343	6,543,817	3,540,457	35,125,617

If the £8.1M capital expenditure is included, then the income generated by BU increases almost a further £1M to £36.1M.

Employment

The direct employment within Bournemouth, Christchurch and Poole as a result of Bournemouth University is estimated to be 1,026 FTEs. The indirect employment brought about by the secondary effects of the expenditure by the University and its students adds a further 356 FTEs and the induced impact another 173 FTEs making a total employment effect in the conurbation of 1,555 FTEs throughout all sectors of the local economy.

Table 11: The Employment Effects of the University, Staff and Student Expenditure on the Economies of Bournemouth, Christchurch and Poole

	Direct	Indirect	Induced	TOTAL
	FTEs	FTEs	FTEs	FTEs
B,C & P Conurbation	1,026	356	173	1,555

The Economic Impact of Bournemouth University on the South West Regional Economy

In order to estimate the economic impact of the University on the South West Region the goods and services purchased by the University, its staff and students were derived from the University accounts and the online surveys. These were then subjected to regional output and income multipliers (derived from the regional input-output model) and the researchers' experience from other studies within the UK.

Table 12: BU Expenditure by Geographical Area, 2007

Expenditure			
	B,C & P Conurbation	South West Region	United Kingdom
	£'s	£'s	£'s
Bournemouth	19,338,715	19,338,715	19,338,715
Christchurch	7,381,636	7,381,636	7,381,636
Poole	7,270,817	7,270,817	7,270,817
Dorset	£33,991,169	15,234,740	15,234,740
SW		6,532,101	6,532,101
Rest of UK		£55,758,010	23,846,375
TOTAL			£80,659,385

Output

The University spent £55.758M within the South West regional Economy. The expenditures made by the University and its students within the South West Region amounts to £141.656M. This is a significant injection of demand into the regional economy. The indirect effects of this expenditure on the level of output in the South West Region adds a further £70.516M and when the induced effects are taken into account this figure increases by a further £28.643M, making a total output effect for the South West region of £240.815M. If the capital expenditure is included the total output figure increases to £254.646M.

Table 13: The Output Effects of the University, Staff and Student Expenditure on the South West Regional Economy

(Students, University and Staff)				
	Direct	Indirect	Induced	TOTAL
	£'s	£'s	£'s	£'s
South West Region	141,655,581	70,516,148	28,642,758	240,814,488

Income

In addition to the direct expenditure made by the University and its students, the staff employed by the University were paid salaries amounting to £42.870M of which £35.038M was paid out as wages and salaries to staff that live within the South West Region. When the indirect income effects are taken into account the level of income within the South West Regional Economy increases to £46.4M and when the induced effects are brought into consideration there is a further £5.553M added to the total regional income impact, making a total regional income effect of £51.953M.

Table 14: The Income Effects of the University, Staff and Student Expenditure on the South West Regional Economy

	Direct	Indirect	Induced	TOTAL
	£'s	£'s	£'s	£'s
South West Region	35,038,809	11,360,778	5,552,899	51,952,485

Employment

The University's activities in the South West region directly employ 1,309 FTEs plus there are another 440 FTE jobs indirectly supported within the region as a result of the University's activities. Finally, once the induced effects are taken into account this adds support for another 179 FTE jobs making a total regional employment effect of 1,928 FTE jobs.

Table 15: The Employment Effects of the University, Staff and Student Expenditure on the South West Regional Economy

	Direct	Indirect	Induced	TOTAL
	FTEs	FTEs	FTEs	FTEs
South West Region	1,309	440	179	1,928

The Economic Activity Supported by Bournemouth University within the UK Economy³

Output

The University's expenditure within the UK in 2007 (including interest payments but less depreciation) together with that of its students provides a total expenditure of £171.153M. This is the direct effect on the UK's economic output.

The indirect effects of this direct spending adds a further £144.830M of output to the economic impact of the University, resulting in a direct and indirect output effect of £315.983M.

If the induced effects are also taken into account this adds a further £121.485M to the level of economic activity supported by BU, across the entire UK economy of £437.468M.

Table 16: The Output Effects of University and Student Expenditure

	Direct	Indirect	Induced	TOTAL
	£'s	£'s	£'s	£'s
UK	171,153,359	144,829,972	121,484,654	437,467,985

When capital expenditure is included the total output supported across the whole UK economy is £458.343M.

Income

In terms of the income supported by the University, its staff and students throughout the UK economy, the direct income effect is £44.334M, being the salaries and wages paid to staff by the University *plus* staff costs which can now be included because we are exploring support at the national level. The indirect income effect adds a further £48.693M as money is spent and re-spent between those individuals and businesses that receive the money spent by the

³ The figures relating to the impact of BU on the UK economy should be treated differently to those relating to the regional and local impacts. They are included more to provide an overview as to the level of economic activity associated with BU and its students rather than the "impact" because UK students would be spending in the UK irrespective of whether or not they were attending BU and, as such, the spending is not additional. A second part of this section outlines the effects of only including international students which is a more accurate reflection of additionality.

University and its students. Finally, when the income that is accrued throughout this chain of transactions is re-spent it adds a further £38.338M to the incomes supported by the activities of BU and its students. Thus, **the total income supported throughout all sectors of the UK economy as a result of the spending by BU and its students is £131.366M.**

Table 17: The Income Supported by the University, Staff and Student Expenditure in the UK, 2007

	Direct	Indirect	Induced	TOTAL
	£'s	£'s	£'s	£'s
UK	44,334,096	48,693,131	38,338,352	131,365,579

Employment

The University employs 1,372 FTEs and using the results of the Universities UK research findings this supports an additional 1,358 FTEs throughout the UK economy. Therefore, in 2007, **Bournemouth University's activities supported 2,730 FTE job opportunities.**

Table 18: The Employment Supported by the University, Staff and Student in the UK Economy, 2007

	Direct	Indirect	Induced	TOTAL
	FTEs	FTEs	FTEs	FTEs
UK	1,374	739	617	2,730

However, when evaluating the economic impact at the national level there is a case to argue that the student expenditure should be reduced by discounting the off-campus expenditure made by UK students on the basis that they would have been spending within the UK irrespective of their attendance at BU. This is a similar argument to that made for removing locally resident part-time students when calculating the economic impact of students on the economies of Bournemouth, Christchurch and Poole.

In a young institution, such as Bournemouth University, the proportion of non-UK students is relatively small and this significantly reduces the overall output and income generating impact of the University.

If the student expenditure is confined to only non-UK students then student spend falls to £11.558M. The revised national output effect falls to £235.708M.

Table 19: The Output Effects of the University, Staff and Student Expenditure on the UK Economy (excluding UK Students), 2007

	Direct	Indirect	Induced	TOTAL
	£'s	£'s	£'s	£'s
UK	92,217,785	78,034,689	65,456,184	235,708,657

Similarly, the economic impact of BU with respect to income generation is also reduced as a result of excluding UK student expenditure and is now shown to be £91.227M.

Table 20: The Income Effects of the University, Staff and Student Expenditure on the UK Economy (excluding UK Students), 2007

	Direct	Indirect	Induced	TOTAL
	£'s	£'s	£'s	£'s
UK	44,334,096	26,235,960	20,656,784	91,226,839

Finally, the effect of excluding UK student expenditure from the analysis reduces the number of full-time equivalent jobs supported by the activities of BU and its international students' expenditure to 2,107 FTEs.

Table 21: The Employment Effects of the University, Staff and Student Expenditure on the UK Economy (excluding UK Students), 2007

	Direct	Indirect	Induced	TOTAL
	FTEs	FTEs	FTEs	FTEs
UK	1,374	452	281	2,107

Bournemouth University's Contribution to the Value of Human Assets

There have been a number of studies that have attempted to estimate the value of a degree or postgraduate qualification to an individual over their working lifetime. One of the more recent studies by Price Waterhouse Coopers on behalf of Universities UK (2006) estimated that the average value of a first degree is £160,000 over the working life of the graduate. The report acknowledges that there is wide variation depending on the subject areas with degrees in medicine and dentistry attracting an income premium of up to £340,000 and subjects like chemistry and physics attracting £185-190,000. Furthermore, postgraduate qualifications attract a premium of £70-80,000 for a degree, £30-40,000 for a PG Cert. In contrast an HNC/HND was estimated to attract an earning premium of £35-45,000 over the working lifetime.

Table 22 shows the increase in lifetime earnings, using the average discounted gross additional lifetime earnings (£160,000), of graduates and postgraduates from BU, for the academic years 2004/5 and 2005/6.

Table 22: The increase in potential earnings associated with a BU graduates and post-graduates, 2004-5 and 2005-6

		2004/5		2005/6	
		Students	Value (£s)	Students	Value (£s)
RDPs	OS	6	480,000	9	720,000
	Home/EU	14	1,120,000	17	1,360,000
PG Taught	OS	408	30,600,000	803	60,225,000
	Home/EU	305	22,875,000	547	41,025,000
UG	OS	180	28,800,000	229	36,640,000
	Home/EU	2,709	433,440,000	3,391	542,560,000
	TOTAL	3,622	517,315,000	4,996	682,530,000
Total	OS		59,880,000		97,585,000
Total	Home/EU		457,435,000		584,945,000

Thus, in 2005 and 2006 graduates and postgraduates from Bournemouth University have increased their lifetime earning potential by £517.3M and £682.5M, respectively.

There have been 44,220 students graduate at BU, since it became a University. Using the average lifetime earning value, it can be seen that the total increase on lifetime earnings attributable to the University's throughput is just in excess of £6,291M.

Table 23: Increase in potential earnings associated with BU graduates and postgraduates in total, up to 2006

	Number	Value (£M)
RDPs	177	13.275
PG Taught	9,044	678.300
Undergraduate	34,999	5,599.840
Total	44,220	6,291.415

In a perfect labour market it can be assumed that the increased lifetime earnings will reflect the value of the increased productivity associated with graduates and postgraduates from Bournemouth University. It is not possible to estimate how these increases in earnings are dispersed geographically across the conurbation, the South West Region or the UK.

APPENDIX

Definitions and concepts

Levels of economic impact

When the University, its students and staff spend money within an economy (be it in the local conurbation, the SW Region or the UK) it will have secondary impacts that percolate throughout all of those economic sectors that either support the University, student and staff spend directly or indirectly. These “knock on” effects are generally referred to as the secondary effects. Generally, economic impact studies break the levels of impact down into three categories:

Direct Effects

These are the effects that come directly from the first round of expenditure made by the University and its students. Therefore the University made a recurrent expenditure of £81.384M. This is direct spending. Similarly students made “additional” expenditure of £87.992M (including visits from friends and relatives) and these will be made to local landlords, food and beverage outlets, entertainment attractions, transport etc as part of the living costs. These are all direct effects.

Indirect Effects

The businesses and individuals that receive the money directly from the University and its students will re-spend a significant proportion of it on goods and services necessary for them to produce their output. For example, a shop that receives money from students will spend money on goods from their wholesalers, transport, electricity and heating for the shop, accountants etc as well as pay their staff wages and raw profits from the business. Similarly, businesses that receive money from the shop will purchase goods and services from other businesses so that they can function, they will also pay out money to staff and owners as wages and profits etc. All of these transactions that will percolate throughout the local economies, the region and the UK economy are known as the indirect effects.

Induced Effects

During the direct and indirect effects as money is used in transactions a portion of that money will accumulate as income in the form of wages, salaries, profits, rent and interest. The recipients of that money will at some stage re-spend the vast majority of it on goods and services as their consumption expenditure. The act of re-spending this income that initially came as a result of the University and its student's activities, creates a further injection of demand into the economy and increases the total effects further. This aspect of the impact is known as the induced effect.

Multiplier

The term multiplier, from an economic perspective, refers to the factor by which you multiply the original expenditure to estimate the direct and indirect effects associated with that original expenditure. There is a variety of multipliers relating to output, income and employment as well as variations in whether they include the direct and indirect effects, or the direct, indirect and induced effects.

Input-Output Models

There are a number of approaches that can be used to calculate the economic impacts of an exogenous change in final demand and these include Export Base Theory, Keynesian Multipliers, Ad Hoc Multiplier Models, Input-Output Models and Computer General Equilibrium Models. This study makes use of input-output multiplier values. The input-output approach is a general equilibrium model that is based upon the sectoral linkages that exist within a given economy. The researchers have extensive experience of input-output models, being responsible for constructing such models for governments and international agencies around the world, including within the UK. They were responsible for the Scottish Tourism Multiplier model which was a benchmark study for the UK and its results have been used to calculate the economic impact of changes in various service demands for the past 20 years.

These terms are used extensively throughout this report.

Survey Data

The data used in this study were collected using 3 online surveys, one for the staff of BU and two for the students. Both survey sets were asked questions relating to where their normal place of residence was, where they spent their money and on what. Staff were asked detailed questions about expenditure in particular post-code areas and the nature of their employment at BU. Staff were also asked specific questions relating to their income and the nature of their employment contract with BU e.g. part-time or full-time. Students were asked where their normal residence was when they were not at BU, where they lived whilst at BU and where they spent their money and on what items. They were also asked demographic questions such as whether they were full-time, part-time, undergraduate or post-graduate etc.

These data provided a very detailed breakdown relating to income and expenditure by staff and students.

Staff Survey

A total of 339 questionnaires were completely completed, 74.5% of respondents were full time staff and 25.5% part time and this sample amounted to almost a quarter of all staff (24.7%). Staff were asked to identify their income range, from £10,000 to over £70,000 as shown in table A1. The respondents were asked to identify where they reside and to estimate their expenditure in Bournemouth, Poole, Christchurch, Dorset, South West, elsewhere in the UK and finally outside of the UK. The income categories from £10,000 through to £39,999 encompassed the majority of respondents (79%). Nearly half of all respondents lived in Bournemouth followed by 21.6% who lived in Poole, and 18.3% who lived in Christchurch thus the conurbation accounted for 74% of all respondents.

Table A1: Descriptive statistics of staff survey

	Frequency	Percentage
Full-time	250	73.7
Part-time	89	26.3
If part-time, No. of days worked?	Frequency	percentage
1	11	13.9
2	19	4.1
3	18	35.5
4	21	49.1
Income Group	Frequency	Percentage
Less than £10k	19	5.8
10-10,999	91	27.7
20-29,999	88	26.7
30-39,999	81	24.6
40-49,999	27	8.2
50-59,999	14	4.3
60-69,999	4	1.2
70+K	5	1.5
Place of normal residence	Frequency	Percentage
Bournemouth	143	45.6
Poole	64	21.6
Christchurch	18	6.8
Dorset	51	18.3
South West	11	3.6
Rest of UK	14	4.1

The staff survey contained 5 questions

1. Are you a full-time or part-time member of staff?
2. If part-time what proportion of time are you contracted to work? Eg 1 day per week
3. Please indicate the income group that applies to you in terms of your contract with BU? Less than £10K £10-19,998 £20-29,999 £30-39,999 £40-49,999 £50-59,999 £60-69,999 £70K+
4. What is your normal place of residence? (Please enter the first part of your postcode).
5. Of your total expenditure each month, what proportion of it is spent in each of the following areas?
5. What % of your total household expenditure is made in each of these areas? (i) Bournemouth (ii) Poole (iii) Christchurch (iv) Dorset (v) South West Region (vi) Rest of UK (vii) Outside of UK

Student Survey

A total of 545 questionnaires were completed by full time students. The off-campus spending ranges from less than £5,000 per annum to over £12,000 (excluding university fees). Students were asked to identify their place of residence whilst studying at BU. Almost 90% of full-time students lived in the conurbation (Bournemouth, 72.8%; Poole, 15.6%, and; Christchurch, 1.0%).

Table A2: Descriptive statistics of student survey (full-time)

Study mode	Frequency	Percentage
Full-time	545	100
Level of study	Frequency	Percentage
Postgraduate	107	79.1
Undergraduate	418	20.9
Annual expenditure	Frequency	Percentage
Less than £5000'	163	29.9
£5,000-5,999	125	22.9
£6,000-6,999	70	12.8
£7,000-7,999	52	9.5
£8,000-8,999	27	5.0
£9,000-9,999	29	5.3
£10,000-10,999	23	4.2
£11,000-11,999	9	1.7
£12,000+	47	8.6
Place of residence term time	Frequency	Percentage
Bournemouth	380	72.8
Poole	82	15.6
Christchurch	7	.9
Dorset	31	6.1
South West	11	1.8
Rest of UK	13	2.6

There is some evidence that non-UK student spend more than home students on accommodation, but the difference is not significant. In terms of those BU students who had previously studied at one of the Language Schools in Bournemouth, only 2% of the sample suggested that this was the case. The average expenditure by students that did attend at a Language School was £,7815.

The finding also shows the biggest proportion of spending by students is on accommodation, averaging £76.59 per week, followed by food and beverage £44.46 per week. Overall, on average it seems that students off-campus spend is around £664.72 monthly (excluding university fees).

Table A3: Weekly Spending by BU full-time student students

Expenditure of Full-Time Students		
Weekly expenditure on:	£'s	% of Total
Accommodation	76.59	46.0
Food & Beverage	44.46	26.8
Transport	14.30	8.6
Other Goods and Services	30.83	18.6
TOTAL	166.18	100.0

With respect to part-time students the survey suggests that the average weekly off-campus expenditure is £153.76 with the largest component being on accommodation (£66.03) followed by food and beverage (£38.88).

Table A4: Weekly Spending by BU part-time student students

Expenditure of Part-Time Students		
Weekly expenditure on:	£'s	% of Total
Accommodation	66.03	42.9
Food & Beverage	38.88	25.3
Transport	20.18	13.1
Other Goods and Services	28.67	18.7
TOTAL	153.76	100.0

Part Time Students

Table A5: Descriptive statistics of student survey (part-time)

Study mode	Frequency	Percentage
Part-time	21	0
Level of study	Frequency	Percentage
Postgraduate	15	71.4
Undergraduate	6	28.6
Annual expenditure	Frequency	Percentage
Less than £5,000'	5	23.8
£5,000-5,999	3	14.3
£6,000-6,999	0	0
£7,000-7,999	3	14.3
£8,000-8,999	0	0
£9,000-9,999	1	4.8
£10,000-10,999	0	0
£11,000-11,999	0	0
£12,000+	9	42.9
Place of residence term time	Frequency	Percentage
Bournemouth	11	52.4
Poole	3	14.3
Christchurch	2	9.5
Dorset	1	4.8
South West	2	9.5
Rest of UK	2	9.5

The student survey contained 8 questions

1. At what level are you studying (UG/PG)?
2. Are you studying full-time or part-time?
3. What is the first part of your residential post code whilst at the University? eg.BH12
4. Approximate annual expenditure during a year?(Please do not include University's fees) Less than £5,000 £5,000-5,999 £6,000-6,999 £7,000-7,999 £8,000-8,999 £9,000-9,999 £10,000-10,999 £11,000-11,099 £12,000+
5. What is your normal place of residence when not studying at the University?
6. If you responded that you are normally resident outside the UK, did you come to Bournemouth to study English prior to joining your BU course?
7. If you studied English in Bournemouth prior to joining your BU course, can you estimate how much you had to spend whilst studying for the English qualification (including Language School fees)?
8. On average, when at the University, how much do you spend per week on the following items? (i) Accommodation? (ii) Food & Beverage? (iii) Transport? (iv) Other Goods and Services?

Part time students at BU tend to spend less than full time students, which runs counter to the findings of other studies, such as the income and expenditure survey. However, the sample size of part-time students was quite small. Nevertheless 28.6% of the part time students who did respond said they don't pay for accommodation (this compares with a figure of only 6.5% for full time students) and this clearly alters the value of the mean.

Residential Characteristics of Students

Table A6 and A7 show the number of students by their place of normal residence broken down into full-time (A6) and part-time (A7).

Table A6: Place of normal residence of full-time students at BU, 2007

Place of normal residence full time student	Number of students	% of Total
Bournemouth	2,299	20.0
Poole	104	0.9
Christchurch	586	5.1
Dorset	701	6.1
South West	1,840	16.0
Rest of UK	4,427	38.5
Outside UK	1,541	13.4

Table A7: Place of normal residence of part-time students at BU, 2007

Place of normal residence part time student	Number of students	% of Total
Bournemouth	1,490	33.4
Poole	423	9.5
Christchurch	423	9.5
Dorset	215	4.8
South West	847	19
Rest of UK	847	19
Outside UK	214	4.8

Table A8: Place of normal residence of (additional) part-time students at BU, 2007

Place of normal residence part time student	Number of students	% of Total
Bournemouth	492	33.4
Poole	141	9.5
Christchurch	141	9.5
Dorset	215	4.8
South West	847	19
Rest of UK	847	19
Outside UK	214	4.8

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