Network for Irish Educational Standards

Paper 2

Grade Inflation in Irish Universities (1994 – 2004)

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March 2007

www.stopgradeinflation.ie

ABSTRACT

Grade inflation arises when there is an improving trend in examination grades over time without an accompanying improvement in learning or academic achievement. It is a phenomenon which has received widespread attention in the United States and in the UK but little to date in Ireland.

This is one of a series of papers from the Network for Irish Educational Standards, researched and written to address the dearth of empirical information and informed analysis on the topic in this country.

The distinction between grade increase and grade inflation is emphasised. Grade inflation occurs when there is grade increase in the absence of enhanced learning. This paper seeks to quantify any identifiable trend in University undergraduate grades between 1994 and 2004 and to establish if any grade increase identified is justified or is likely to have resulted from grade inflation.

Very significant grade increase across the University sector is identified. Comparing the last three with the first three years of the period examined, a 76% increase in First Class and a 21.4% increase in Upper Second awards occurred.

In 1994, no University had a rate of Firsts that exceeded 10%. By 2004, the rate for every University exceeded 10%, with one exceeding 15% and another 20%. As for the 2.1 rates, in 1994 four of the seven Universities were below 30% but by 2004 all Universities exceeded 30%, with four above 40% and one exceeding 50%.

The level of grade increase was compared with the change in academic entry requirements for University Degree courses over the period and with the trends in CAO points obtained by Leaving Certificate students. While a modest trend of increasing points' requirements was in evidence, it was not of a scale likely to explain the level of grade increase found. In addition, there was a steep ascent in overall CAO points due to better grades being obtained through the Leaving Certificate. The trend in Leaving Certificate grades, it is argued, is due to grade inflation, not improved academic achievement and, therefore, more than counteracts the implications of the increase in points' requirements for entry to Degree courses over the period. In fact, it is likely that less capable students were obtaining far better grades at graduation as time passed.

The possibility that ongoing grade increases are a result of ongoing improvements in the ability, motivation or education of students is discussed. No evidence in support of this proposition could be identified. On the contrary, ample evidence exists that the average level of ability and motivation among University students declined during the period under consideration. In the circumstances, the change in educational effectiveness required to explain such a transformation in grades would have to have been ubiquitous and on a grand scale. There is no evidence whatsoever of anything of that nature having occurred.

It is concluded that serious grade inflation afflicted the Irish University sector between 1994 and 2004. At the current rate of inflation, less than 30 years from now all graduates will receive First Class Degrees.

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1. Introduction

1.1 Background

1.1.1 The concept of grade inflation

In defining grade inflation Rosovsky and Hartley (2002) cite Goldman (1985) as follows:

> *Grade inflation can be defined as an upward shift in the grade point average (GPA) of students over an extended period of time without a corresponding increase in student achievement* (p.4).

The concept of grade point average is drawn from the US practice in education of assigning letter grades with corresponding point values in the marking of individual subject examinations and then aggregating the different grades into a grade point average for grading the qualification as a whole. While the grade point average system is used to some extent in higher education in Ireland, a more generally applicable version of the above definition would be: a pattern of improvement in grades over time without a matching improvement in learning achieved.

The expectation in education and throughout society at large is that improvements in the pattern of grades should reflect genuine improvements in the standard of learning. An alternative explanation for improving grades may be that they reflect declining standards as opposed to enhanced achievement – that is, grade inflation. The 'inflation' metaphor derives from the similarity with the better known concept of price inflation. In a price inflationary world it is not possible to compare incomes over time to estimate whether or not people are getting better off. In a grade inflationary world it is not possible to compare grades over time to estimate whether people are getting more educated.

1.1.2 Concerns about grade inflation.

Over the last decade or so, increasing concerns have been expressed among educationalists, education policy formulators, employers and journalists about grade inflation in educational qualifications, particularly in the US and the UK. It has been the subject of at least two books (Johnson, 2003; Hu, 2005), numerous conference papers, reports and journal articles (Goldman, 1985; Stone, 1995; Hesseln & Jackson, 2000; Ghaddar & Moukalled, 2001; Rosovsky and Hartley, 2002; Mansfield, 2002; Jost, 2002; Leef, 2003; Manhire, 2004; Walsh, 2004) and widespread media attention (BBC News,

2001; Garner, 2003; Channel 4 News, 2004; Fitzgerald, 2006; Flynn, 2006; Walsh, 2006).

In seeking to explain why grade inflation occurs, different analysts and commentators have drawn attention to a variety of potential causes. These include: the link between funding and number of students recruited by educational institutions, increased access to higher education, vulnerability of examiners to pressure from students, treatment of students as consumers, low priority accorded the grading process within higher educational institutions and cultural hostility to the hierarchical logic inherent in the grading process (Stone, 1995; Rosovsky and Hartley, 2002; Wolf, 2002; Johnson, 2003; Leef, 2003; Mansfield, 2002, 2003).

The causes of grade inflation in the Irish context are discussed in O'Grady and Quinn (2007a).

Hu (2005) draws attention to the important distinction between grade increase and grade inflation, to the fact that it is not safe to simply infer the latter from the former. It is necessary to question whether or not a temporal increase in grade trends might not be justified in terms of improved learning. By the same token it is, of course, essential not to assume without evidence that increased grades imply improved learning because of the possibility of grades growing progressively more divorced from actual learning. This is the grade inflation hypothesis, for which ample evidence has been adduced, as indicated above, and for which in this paper we show evidence in the Irish University sector. O'Grady and Guilfoyle (2007a) analyse the evidence for grade inflation in the Institutes of Technology.

The soundest stance would appear to be a position where grade increase on its own is neither taken to prove enhanced learning nor grade inflation. Improved learning might reasonably be inferred from increased grades when there is independent evidence that the body of students in question have better learning abilities. This could be assumed when, for example, entrance requirements become more stringent. Alternatively, an inference of improved learning might be warranted where there is a significant change in teaching methodology or resources that have an empirically proven record of achieving learning enhancement. On the other hand, grade inflation may be the most accurate inference where there is a significant pattern over time of increasing grades in the absence of any evidence that either the academic ability of students or the effectiveness of their education has risen substantially.

This may appear to be an implied imbalance in the burden of proof, with the onus falling on educationalists to demonstrate that grade increase is *not* a function of grade inflation. This, however, is no more than the standard

expectation of those responsible for the measurement of human (or indeed any other) variables: that they show that their measuring instruments are valid and measure according to the standards that are expected. Such an expectation is warranted all the more when those responsible for producing the variable being measured are also responsible for its measurement, which is precisely the situation that prevails in higher education. The institutions and academics who provide the education – the learning subsequently measured as grades through examinations – are the same institutions and individuals responsible for the conduct of those examinations.

1.1.3 Grade increase and inflation in the US and UK

That there has been extensive grade increase in recent decades across both secondary and higher education in both the US and the UK is not in dispute. The figures are summarised below. Whether this represents grade inflation is a matter of more debate.

It is estimated that in US Universities grades on average increased between the mid nineteen sixties and the mid nineteen nineties to the extent of adding 15-20 percent to the grade point averages (Rosovsky and Hartley, 2002). Data drawn from the series of annual surveys of first year University entrants across the country indicate a very strong pattern of grade increase at second level in the US. In 1972 the proportion of college entrants reporting a grade point average from high school of A minus or better reached the 20% point. By 2005 it had exceeded 45%, while the proportion reporting a C average or lower GPA dropped from 20% to close to 5% over the same period (UCLA, 2006).

In the UK higher education sector, the rate of First and Upper Second awards in Primary Degrees increased from 47% in 1994/5 to 56% in 2004/5 (DfES 2007a). At second level, there has been a continuous climb in grades for many years. Grades at A-level have been rising constantly for 25 years. In England in 1981, 68.1% passed the examination. In 1994, 75.1% passed. By 2006, the pass rate had ascended sharply to 96.6%. Higher grades have also been on a regular upward trajectory over time. In 2006 the proportion of examinations graded as A or A* was 24.1%. In 1991, 11.9% were graded as A[1] (BBC News 2001; BBC News 2006a; DfES, 2007b).

A similar temporal pattern is evident with respect to O-levels. In England, the percentage of O-Level/CSE/GCSE entrants achieving 5 or more grades of C or better was 22.6% in 1975. This percentage exceeded the 30% threshold by 1988, the 40% threshold by 1997 and stood at 62.1% in 2006. (DfES, 2007c; BBC News 2006b)

[1] The grade of A* did not exist in 1991

With respect to the US, the bulk of the debate on grade inflation has focused on Higher Education where there is a significant body of analysis suggesting that the improved grades represent declining standards and not improved learning (Stone, 1995; Rosovsky and Hartley, 2002; Leef, 2003; Johnson, 2003). Academics point to extensive independent evidence of a decline in the quality of primary and secondary education, declines in Scholastic Aptitude Test (SAT) scores, an increase in the proportion of educationally weak freshmen, increased requirement for remedial intervention in Universities and poorer standards of literacy among graduates, all at a time when grades continued to rise. There has been a long list of critical evaluations of the quality of higher education in the US which strongly supports the grade inflation thesis (National Institute of Education, 1984; National Centre for Educational Statistics, 1988; National Governors Association, 1989; Wingspread Group on Higher Education, 1993).

In the UK, academic analysis and commentary on the matter of grade inflation has been more muted. A few noted figures in the world of higher education have asserted that grades at some Universities are not what they seem to be. Professor Alison Wolf of the University of London's Institute of Education states:

> *No one really believes that degree standards are the same across the whole of this vast higher-education sector, [UK] or that they could be. That is why a good many major graduate recruitment schemes now specify minimum A-levels point scores as well as a class of degree* (Wolf, 2002, p.230).

Other academics such as Bob Brecher, a reader in Philosophy from Brighton University and Richard Sykes, Rector of Imperial College, London have voiced their views to the media that standards are declining in UK Universities (Channel 4 News, 2004). Employers also have expressed doubts about the maintenance of standards. In a survey of employers conducted by the Association of Graduate Recruiters, six out of ten firms said that the ongoing expansion of University places in the UK was having an adverse effect on the quality of graduates (BBC News, 2004). The implication is that standards are being lowered to accommodate the weaker students that must be admitted onto Degree courses so as to fill the constantly expanding places. The UK government has been pursuing a target of getting half of all 18-30 year olds into University by 2010. Another survey of employers carried out for a Channel 4 programme in May 2004, entitled "Dumbed Down Degrees," found that 70% of employers believed that Degrees have declined as a measure of ability over the previous ten years.

It is the inherent conflict between increasing participation in third level education and rising grade profiles that perhaps most strongly suggests the

existence of grade inflation. In 1994-5, a total of 220,000 graduated with Primary Degrees in the UK. By 2004-5, the number graduating had increased by 23% to 270,000 (Royal Society, 2006). In 2004-5, 55% obtained a First or an Upper Second Honour's Degree, as compared with 47% in 1994-5 (DfES,2007a). Over this period, the proportion of 18-30 year olds in the UK population was in decline (Channel 4 News, 2004). The question is whether an increase of nearly a quarter in recruitment into Higher Education, drawn from a shrinking pool, resulted in an increased cohort of academically less able and motivationally weaker students going forward for Degrees. For that to have been avoided, it would require that up to 1994-5 there existed a large number of potential University entrants of precisely equal academic ability to those who went to College, who were denied or forwent the option to pursue a Degree. It would seem surprising that, as late as 1994-5 in the UK, such a situation would have prevailed, only to have changed radically in the following decade. The fact that grades among graduates have increased, not fallen, between 1994-5 and 2004-5 does seem to offer strong circumstantial evidence of grade inflation.

As for second level in the UK, there has been an ongoing debate about whether or not the rise in A-level grades has been achieved through a progressive diminution of standards in the examination. Influential figures such as Ruth Lea, Head of Policy at the Institute of Directors, Chris Woodward, former Chief Inspector of Schools in England (BBC News, 2001) and David Thomas, Chief Executive of the Careers Research Advisory Centre (Hencke, 2004) have suggested that grade inflation is behind the trend. Grade compression at the top in A-levels, with so many students attaining all A grades, has become a serious obstacle for some Universities in selecting from among the pool of applicants using the A-level criterion. Both Oxford and Cambridge Universities have begun to employ their own aptitude tests to identify the more suitable students (Ward, 2004).

To date, no definitive empirical data has emerged to either support or undermine the grade inflation claims in A-levels. Professor Eva Baker, a US educationalist who chaired an expert panel appointed by the Qualifications and Curriculum Authority in September 2000 to examine the issue, reported:

> *There is no scientific way to determine in retrospect whether standards have been maintained* (BBC News 2002).

Recently, further attention has been drawn to the question of A-level standards by the manner in which the Universities and Colleges Admission Service (UCAS) has elected to equate the International Baccalaurate with A-levels. An IB score of 38 points (maximum = 45) is equated with five A grades in A-level subjects and a score of 30 points is taken as the equivalent of three and a half A grades in A-levels. The high weighting given the International

Baccalaurate suggests that UCAS deems the A-level to have lower value in relative terms (Harris, 2006).

1.1.4 Grade increase/inflation in the Irish University sector

There has been little discussion, debate or analysis to date in Ireland about grade patterns or the possibility of grade inflation in the Irish higher education sector. Educational journalists have focused instead on the likelihood of the problem at Leaving Certificate level (Walsh, 2006; Holt, 2006; Flynn, 2006).

One prominent figure, Garrett Fitzgerald, Chancellor of the National University of Ireland and former Taoiseach, though he has not asserted that grade inflation is underway, has warned against the dangers of the problem taking root in third level education in Ireland (Fitzgerald, 2006).

Evidence of grade inflation in the Institute of Technology sector exists. Walsh (2004) identified a clear pattern of grade increase in NCEA qualifications awarded through the Institute of Technology sector. O'Grady et al (2004) argued that this represented grade inflation. A more extensive study covering the period 1994-2004 identified convincing evidence of extensive grade inflation at National Certificate, National Diploma and Bachelor's Degree level throughout the Institutes of Technology (O'Grady and Guilfoyle, 2007a). No research has previously been conducted on the possibility of grade inflation in the University Sector in Ireland.

1.2 The Present Study

1.2.1 Methodology

The present study set out to examine the grading trends in all undergraduate Degrees awarded through the seven Universities: Trinity College Dublin (TCD), University College Dublin (UCD), National University of Ireland Galway (NUIG), National University of Ireland Maynooth (NUIM), University College Cork (UCC), Dublin City University (DCU) and University of Limerick (UL). Data was analysed over the years 1994-2004 in order to identify if there was any evidence of grade inflation in the sector.

The graduate totals and the grade results were drawn from the Higher Education Authority's published figures. It was necessary to exclude the Arts Degrees at UCD because of the erratic way in which results were reported by the HEA for this qualification over the period. Unfortunately, the HEA did

not furnish grade results for 2003, so it was not possible to include figures for that year.

1.2.2 Computation of grade pattern

The grade patterns over the 11 years were identified for each of the Universities separately. The focus was on the proportion of Firsts and Second Class, Grade One (2.1) awards. The proportion of Firsts was calculated as a percentage of Degree awards in each University, excluding, where possible, Degrees that did not receive a classification. It was not always possible to identify such Degrees and in consequence some unclassified Degrees were included in the total. Such cases occur where, for example, ordinary Degrees were included by the HEA together with passes in Honour's Degrees. The numbers involved are small relative to the overall totals.

In calculating the proportion of Second Class, Grade One Degrees, a further exclusion from the total was necessary. This involved those Degree awards identified as being undivided seconds. Apart from TCD this issue either did not arise or represented only a few percent of awards at most. In TCD up to 2002 between 900 and 1400 graduates were excluded each year on this basis.

In an effort to exclude random year to year variations and to quantify the level of change in grades, the figures were aggregated for the first three and the last three years of the series. Since figures for 2003 were unavailable, the figures for 2002-2004 were calculated using only 2002 and 2004. The change in the proportion of Firsts and 2.1 grades was in each case expressed as a percentage of the 1994-96 rate so as to obtain a quantified level of change over the entire period.

1.2.3 Deriving evidence of grade inflation

Two sources of data were drawn upon for the purpose of identifying evidence of grade inflation. These were patterns of minimum CAO points necessary to gain entry to University courses and variation in the number of CAO points obtained by higher education applicants over the period.

It was hypothesised that evidence of grade inflation could be drawn from a temporal pattern of increasing grades that was not matched by a commensurate level of increase in the academic ability threshold for gaining entry to courses over the period, as evidenced in higher CAO entry points. It was decided that the inference with respect to increase in the academic ability threshold, drawn from minimum entry points, would have to be corrected for any pattern of increase in the average entry points achieved by successive Leaving Certificate cohorts.

In the event of there being a clear grade increase trend over the period examined, the possibility of grade inflation would, therefore, be excluded if the percentage improvement in grades was matched by a similar level of increase in the average points' threshold for entry to University courses and if that latter increase was not offset by an increase in the overall level of points obtained by students. Otherwise, following the logic outlined above, the assumption of grade inflation would be taken as warranted.

2. Grade Increase in Irish Universities

2.1 The Pattern of Grades 1994-2004

Table 1 and Figure 1 below summarise the rates of award of Firsts Class Honours in Primary Degrees at the seven Irish Universities between 1994 and 2004.

Table 1: Percent First Class Honours in Primary Degrees 1994-2004*

Year	UCD	UCC	NUIG	TCD	NUIM	DCU	UL
1994	9.4	6.5	7.4	6.8	1.5	9.5	7.2
1995	10.0	6.7	9.4	7.0	2.0	8.7	7.6
1996	8.1	7.6	9.1	6.5	1.8	7.5	8.9
1997	9.0	7.7	10.4	7.5	1.3	9.0	10.1
1998	8.0	8.6	8.8	8.1	3.0	12.1	8.2
1999	9.4	8.8	10.0	7.6	4.5	12.2	8.8
2000	10.6	10.1	10.2	7.8	4.3	13.1	10.1
2001	10.5	11.1	11.7	10.0	5.1	15.0	10.5
2002	11.7	12.3	16.3	9.1	8.7	13.7	10.1
2004	13.2	15.9	14.8	13.9	11.1	20.6	11.7

* Figures unavailable for 2003

Figure 1: Percent First Class in Primary Degrees 1994-2004

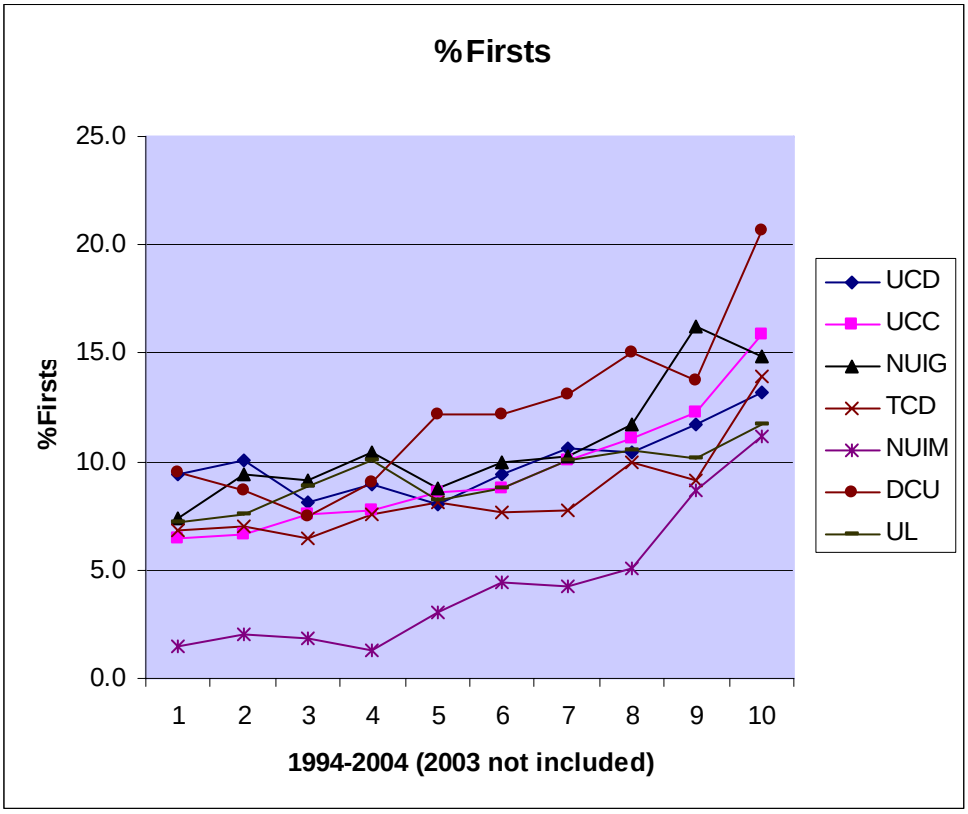


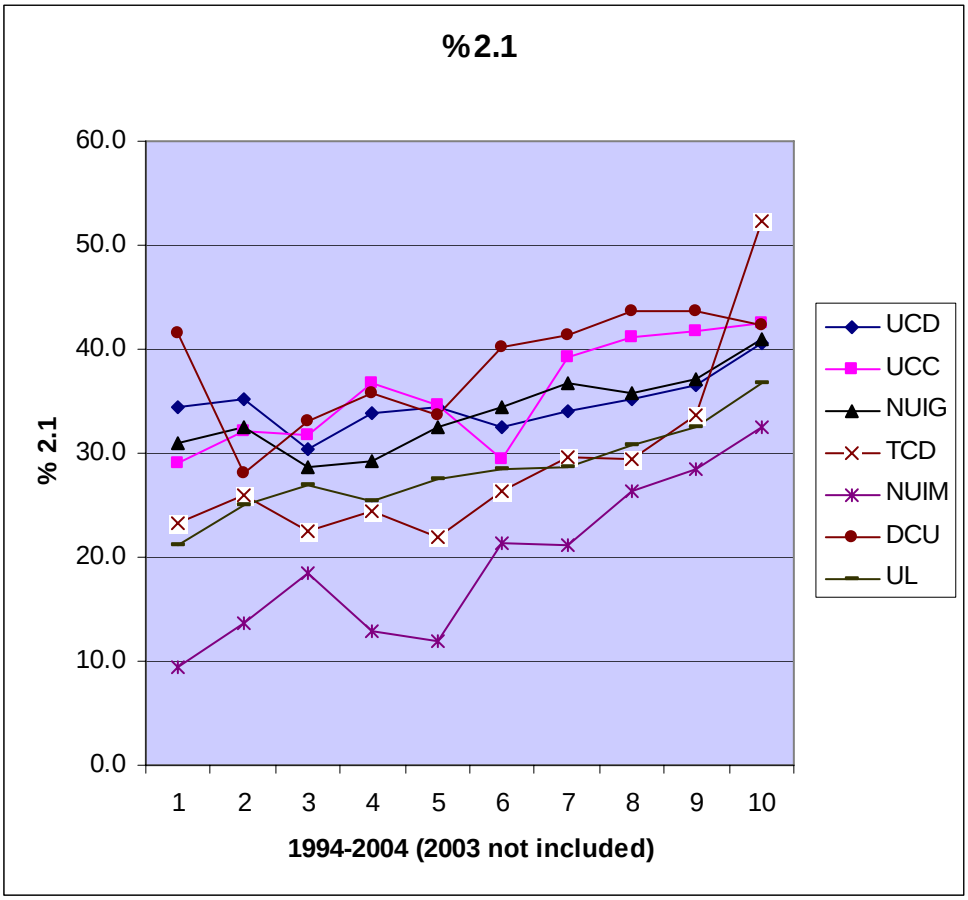
Table 2 and Figure 2 below summarise the rates of award of 2.1 grades between 1994 and 2004.

Table 2: Percent 2.1 Honours in Primary Degrees 1994-2004*

Year	UCD	UCC	NUIG	TCD	NUIM	DCU	UL
1994	34.4	29.1	30.9	23.2	9.4	41.5	21.2
1995	35.3	32.2	32.5	26.0	13.6	28.1	25.0
1996	30.5	31.8	28.6	22.6	18.5	33.1	27.0
1997	33.8	36.6	29.2	24.4	12.9	35.8	25.4
1998	34.4	34.5	32.5	21.9	12.0	33.7	27.6
1999	32.5	29.4	34.5	26.4	21.4	40.3	28.5
2000	34.0	39.2	36.8	29.7	21.2	41.4	28.6
2001	35.1	41.1	35.7	29.5	26.3	43.7	30.8
2002	36.6	41.7	37.1	33.7	28.6	43.7	32.4
2004	40.7	42.5	41.0	52.3	32.5	42.3	36.7

* Figures unavailable for 2003

Figure2: Percent 2.1 Honours in Primary Degrees 1994-2004



While there are some year on year drops in the proportion of First and 2.1 awards, the overall shift over the period is very obviously upwards in all seven Universities.

In 1994, no University had a rate of Firsts that exceeded 10%. By 2004, the rate for every University exceeded 10%, with one exceeding 15% and another 20%. As for the 2.1 rates, in 1994, four of the seven Universities were below 30% but by 2004, all Universities exceeded 30%, with four above 40% and one above 50%.

2.2 Quantifying Grade Increase

In an effort to quantify the changes in grades awarded over the period that would not be subject to random year to year variations the figures for the combined 1994-96 period were compared with those for 2002-2004. Due to the 2003 results not being available, this latter period consisted of the 2002 and 2004 figures only.

For each year of the analysis the number of Degrees awarded and the number of Firsts and Upper Seconds were totalled within and across the seven Universities. Percentages were then calculated and the percentages were averaged so as to obtain representative rates for the two comparison periods.

The rates of grade increase for each University and for the sector overall are summarised in Tables 3 and 4 below.

Table 3: Percentage Change in Rate of Firsts between 1994-96 and 2002-04

Year	NUIM	UCC	DCU	NUIG	TCD	UL	UCD*
1994	1.5	6.5	9.5	7.4	6.8	7.2	9.4
1995	2.0	6.7	8.7	9.4	7.0	7.6	10.0
1996	1.8	7.6	7.5	9.1	6.5	8.9	8.1
Mean % (94-96)	1.8	6.9	8.5	8.6	6.8	7.9	9.2
2002	8.7	12.3	13.7	16.3	9.1	10.1	11.7
2004	11.1	15.9	20.6	14.8	13.9	11.7	13.2
Mean % (02-04)	9.9	14.1	17.2	15.6	11.5	10.9	12.5
% Increase	459.0	104.3	101.2	79.9	70.2	38.1	35.6

*UCD figures do not include Arts faculty

The rate of increase in Firsts at all Universities is substantial over the period but ranges from a low of 38.1% at the University of Limerick to a remarkable high of 459% at NUI Maynooth.

The absence of Arts faculty data may have had a very substantial impact on UCD figures. As Arts accounts for a significant proportion of graduates in the University (34%-43%), any trend there would have had a major impact on the overall figures. The results for UCD cannot, therefore, be accurately compared with the other Universities.

When the figures were aggregated across the seven Universities, the raw figures were totalled for each year before percentages were computed so as to take into account the varying numbers of graduates in the seven institutions. It should be noted that the lower rate of increase for UCD has had the effect of reducing the average increase in the sector.

Looking at the overall sector over the period 1994-96, the average rate of Firsts was 7.4%. By 2002-04 the comparable figure had increased 76% to 13%.

Table 4: Percentage Change in Rate of 2.1 awards between 94-96 and 02-04

Year	NUIM	TCD	UL	UCC	NUIG	DCU	UCD*
1994	9.4	23.2	21.2	29.1	30.9	41.5	34.4
1995	13.6	26.0	25.0	32.2	32.5	28.1	35.3
1996	18.5	22.6	27.0	31.8	28.6	33.1	30.5
Mean % (94-96)	13.8	23.9	24.4	31.0	30.7	34.3	33.4
2002	28.6	33.7	32.4	41.7	37.1	43.7	36.6
2004	32.5	52.3	36.7	42.5	41.0	42.3	40.7
Mean % (02-04)	30.5	43.0	34.6	42.1	39.1	43.0	38.6
% Increase	121.0	79.6	41.7	35.7	27.5	25.6	15.7

*UCD figures do not include Arts faculty

The rate of increase in the award of the 2.1 grade, though not as great as that for Firsts, is nonetheless again substantial. The lowest figure, that for UCD, has to be treated with caution as explained above. Otherwise, the rate of increase varies from 25.6% at DCU to a high of 121% at NUI Maynooth.

When the data were aggregated across the seven Universities the average annual rate for Upper Seconds for the period 1994-96 was 28.3%. This had increased by 40% to 39.2% for 2002-04.

It is notable that, not only have grades risen very considerably over the eleven years analysed, but that the greatest increase was at the First Class level. Over the 1994-96 period there were 3.4 times as many Upper Seconds as Firsts awarded but in 2002-04 the ratio had dropped to 2.9. While both higher grades had become considerably more frequent, the top grade had become relatively more common.

Overall, there is a very consistent pattern of quite dramatic grade increase across the entire University sector in Ireland between 1994 and 2004.

3. Grade Inflation in Irish Universities

3.1 Evidence of Grade Inflation

Minimum CAO entry points were taken as indicative of the ability and preparadeness of students entering University. Because of the possibility of grade inflation in the Leaving Certificate examination, it was necessary to correct for any clear pattern of grade increase over the relevant period.

With the exception of a few courses such as Medicine and Veterinary most Bachelor's Degrees are of 3 or 4 years duration. The bulk of the 1994 graduates would have entered college in 1990 and 1991, while the 2004 graduates would have mainly entered in 2000 and 2001. Unfortunately it is not possible to compare CAO points over the full 1990-2001 period due to the introduction of the new CAO points system in 1992. A further obstacle is that the CAO was unable to supply the necessary figures to check for increase in average CAO points prior to 1995.

It was decided, therefore, to examine the trend in CAO points for those years for which figures were available, the years 1995-2006. Table 5 below summarises the changing profile of CAO points over those years.

Table 5: Overall CAO points profile 1995-2006

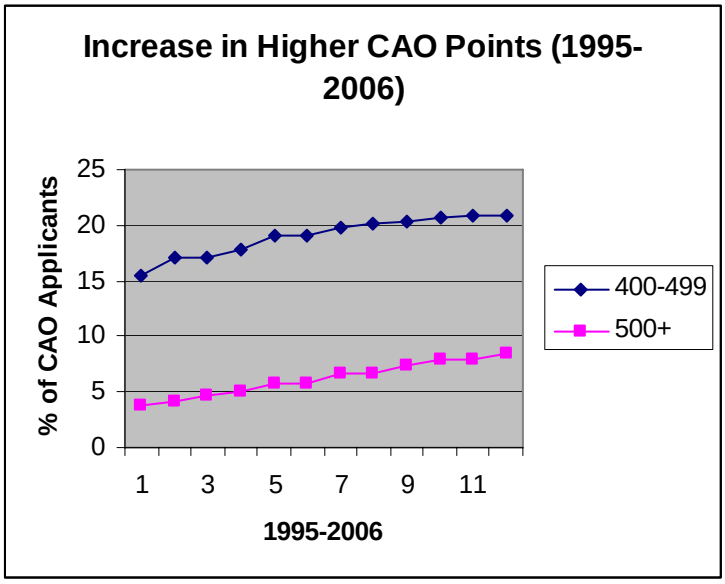
Year	<100	100-199	200-299	300-399	400-499	500+
1995	19.9	19.2	19.7	21.9	15.5	3.8
1996	18.9	18.0	19.8	22.1	17.0	4.2
1997	18.2	18.6	19.4	22.1	17.1	4.6
1998	14.9	19.0	20.5	22.7	17.8	5.1
1999	13.0	17.8	20.5	23.9	19.0	5.7
2000	12.4	16.7	20.5	25.5	19.1	5.7
2001	11.8	16.1	20.4	25.4	19.7	6.7
2002	12.1	15.7	20.2	25.1	20.1	6.7
2003	11.3	15.1	20.3	25.6	20.4	7.3
2004	11.9	14.7	19.4	25.4	20.7	7.9
2005	11.7	14.9	19.1	25.4	20.9	8.0
2006	11.6	15.0	19.4	24.7	20.9	8.4

A clear and consistent pattern of increase in CAO points is evident The proportion of candidates getting 400+ points climbed annually from 19.3% in 1995 to 29.3% in 2006, a 51.8% increase over the period. The increase at the upper end of the scale is most dramatic with the proportion getting over 500 points increasing steadily from 3.8% in 1995 to 8.4% in 2006, an increase of 121%.

Is it fair to extrapolate the level of grade increase over the period 1990-2001 from the level found for 1995-2006? This depends on whether it is likely that the trend began in 1995 or whether the figures represent the continuation of a process with earlier origins, dating back at least to 1990.

Looking at a graph of the trend in higher points (Figure 3 below), the ascent has been quite steady throughout the 11 year period. It seems statistically unlikely that a steady trend that has endured for so long would have suddenly come into being in 1995, which is after all an arbitrary year decided only by the years for which the CAO were able to supply the figures.

Figure 3: Increase in CAO points1995-2006



There is further evidence which strongly suggests that the trend preceded 1995. This comes from an examination of Leaving Certificate grades between 1991 and 1995.

Table 6 below lists the subjects in which at least 1000 students completed higher level papers in 1991, 1992 and 1995. The percentage of combined A and B grades at higher level are listed for each year. A pattern of major grade increase is evident between 1991 and 1995. Out of the 21 most popular subjects – there were 11 other subjects with numbers ranging from a half dozen to over 900 each year – 18 show grade increases, 2 minor decreases (<5%) and one no change between 1991 and 1995 in the higher grades. As for the rate of increase, eight subjects show over a third more A & B grades in 1995, three others over a fifth additional higher grades and four others between a tenth and a fifth more A and B grades.

Because 1991 was the last year before the new Leaving Certificate grading system was introduced, the 1992 figures are included in Table 6 to act as a check for any major impact of the changeover. Averaging the rate of grade increase over the 21 subjects, an overall rate of increase in A & B grades between 1991 and 1995 of 21.7% (annual rate of 5.4%) is obtained. By the same method the overall rate of increase between 1991 and 1992 is 6.4%. No obviously disproportionate impact on grade increase can be attributed to the introduction of the new system. It should be noted that averaging rates across subjects, though appropriate for comparison purposes, does not accurately calculate real grade increase because no account is taken of the numbers taking each subject.

Table 6: Total Percentage of A and B grades at Leaving Certificate higher level 1991, 1992 & 1995 and percentage change between 1991 and 1995.

Subject	1991 %	1992 %	1995 %	Change 91-95 %
Irish	28.0	29.2	31.3	11.8
English	18.7	21.1	24.7	32.1
Mathematics	28.8	32.7	49.2	70.8
Applied Mathematics	38.8	54.6	52.3	34.8
History	25.4	29.9	33.8	33.1
Geography	20.2	18.0	25.1	24.3
French	28.2	26.3	27.8	-1.4
German	34.9	35.6	33.2	-4.9
Art	20.1	17.1	27.3	35.8
Physics	31.8	28.0	36.7	15.4
Chemistry	33.8	37.1	37.2	10.1
Agricultural Science	17.4	23.9	31.9	83.3
Biology	27.3	34.7	29.2	7.0
Engineering	30.4	34.7	30.4	0.0
Technical Drawing	29.3	31.4	39.0	33.1
Construction Studies	44.5	42.6	49.6	11.5
Accounting	31.0	28.3	31.3	1.0
Business	20.0	23.0	28.8	44.0
Economics	26.9	25.0	32.3	20.1
Home Economics	26.2	27.4	28.4	8.4
Physics & Chemistry	26.8	25.5	36.9	37.7

If we are to accept that in broad terms the 1995-2006 figures are likely to be representative of the changes occurring between 1990 and 2001, it becomes necessary to correct any changes in minimum entry points for potential grade inflation at Leaving Certificate level.

Extrapolating directly from the 1995-2006 figures, it follows that there was an increase of in the order of 50% between 1990 and 2000 in the proportion of CAO applicants able to gain access to University courses with minimum entry points of 400. Before establishing the implications of that, it is first

necessary to examine any changes in entry points between 1990 and 2001 across the University sector.

3.2 Minimum Entry Points

Due to the introduction of the new CAO points system in 1992, it is not possible to compare the points through which most of the 1994-96 graduates were admitted with the 2002-2004 graduates. The next best alternative is to take the minimum points for 1992-1993 and compare them with the 1998-2001 points – the years during which the vast majority of the 2002-2004 graduates would have entered college.

Table 7 below summarises the figures based on a count of the CAO published course entry point charts for each year.

Table 7: Comparison of minimum entry points in 1992-3 with 1998-01 for courses across the seven Universities[2]

Minimum Points	% of courses 1992-93	% of courses 1998-01
Less than 400	47.7	39.4
Less than 450	76.8	66.4
Less than 500	89.6	85.9

A clear increase in points' requirements is evident in Table 7, with the number of courses requiring over 400 points rising from 52.3% to 69.6% and the number requiring at least 450 points jumping from roughly a quarter to roughly a third between the two periods. If the trend towards higher points' requirements commenced at least as early as 1990, then this represents an underestimate of the increase over the period during which graduates from 1994 to 2004 arrived in college.

Would the upward trend over the period in overall points acquired, based on an extrapolation from the 1995-2006 figures, be sufficient to account for such a level of increase in minimum points requirements? According to the extrapolation employed, over half as many candidates again at the end of the period under examination would have had the CAO points to access courses set at a minimum of 400 than would have had such points at the beginning of the period. Since more than half of all University courses required that level of points, even in the earlier years, the impact of such a large change at the 400 threshold would have had a very substantial impact on the setting of minimum points. The fact that the increase accelerated at higher points'

[2] There are potential deficiencies in the use of minimum points as a metric of student ability which are addressed in section 3.4 below.

levels – a 121% increase in candidates with over 500 points – means that the impact on minimum point levels would be all the greater.

Given the very large upward trend in the national CAO points' profile, a trend that includes a steeper climb in the higher points' region, it would be a very conservative conclusion that the much more modest rise in minimum points for access to University courses described above was due in its entirety to this trend. A more reasonable conclusion would be that the real academic threshold for entry to University dropped significantly. This is, of course, predicated on the theory that better Leaving Certificate grades in more recent years represents grade inflation rather than actual improvements in learning and academic aptitude for third level study. This theory is difficult to prove directly given the lack of comparative indices against which to benchmark Leaving Certificate grades.

The fact, however, that grade inflation has occurred elsewhere suggests the real possibility of it happening here. The clearest data comes from the United States. Freshmen across the US have demonstrated a sharply ascending high school GPA trend going back to the late nineteen sixties. In 1968 only 17.6% of first year college students had a GPA of A minus or better. By 1987 this figure was close to 30% and by 2004 it had climbed to 46.6% (UCLA, 2003, 2004). That this apparent improvement in learning is really grade inflation is borne out by a number of other findings, the most convincing of which is the trend in Scholastic Aptitude Test (SAT) scores. In 1987, the combined Verbal and Mathematical mean national SAT score was 1008[3]. By 2004, the comparable figure was 1026[4] (Kobrin, Sathy and Shaw, 2007). The small SAT increase over the period, almost entirely accounted for by Mathematics, goes nowhere near explaining the high school GPA increase over the same period. Further evidence that grade inflation is at work in US high schools comes from the annual nationwide surveys of freshmen conducted by the University of California at Los Angeles Higher Education Research Institute. The 2003 survey found that:

> *As their grades continue to escalate, students' time spent studying remains low. In 2003 only 34 percent of entering freshmen report studying or doing homework six or more hours per week in their senior year of high school, the second lowest figure since that item was added to the survey in 1987 (when it reached 47 percent)* (UCLA, 2003, p.3).

The 2004 survey offered further confirmatory evidence of the grade inflation theory. It found that:

[3] From 1996 SAT scores were reported on a new scale. The figure for 1987 has been adjusted to report it on the new scale to allow for meaningful comparison with the 2004 figure.

> *As grades have risen, so has student boredom. The percentage of students who were "bored in class" during their final year of high school reached a record 42.8 percent, compared to 40.1 percent last year and a low of 29.3 percent reported in 1985. There was also a downward trend in students' out-of-class interactions with their teachers. Less than half of students (47 percent) report spending at least one hour per week talking with their teachers out of class, compared to a high of 63 percent reported in 1989* (UCLA, 2004, p.4).

Increasingly bored students, doing less homework, interacting less with their teachers and showing little change in scholastic ability as measured by a standardised test are, nevertheless, receiving improving grades in high school year on year. This is an obvious pattern of grade inflation. While there are major differences between the US and the Irish examination systems which should act to protect the Leaving Certificate from the extremes of grade inflation identifiable in the US, grade inflation is not supposed to happen there either. Yet, undoubtedly, it is happening in a very large way. It would be naive to assume that the Irish secondary educational system is immune from this trend.

A forthcoming paper by O'Grady and Guilfoyle (2007b) will describe major grade increases since 1990 in virtually all Leaving Certificate subjects at both ordinary and higher level. Grade inflation, it will be argued, accounts for most of the change.

Apart from the likelihood of grade inflation in the Leaving Certificate, there is a further compelling reason to suspect that students entering University over the period of the current study were, on average, academically weaker groups as time passed. This is the fact that successive groups of entrants constituted significantly larger proportions of the relevant age cohort.

The overall number of graduates for the years 1994-2004, listed in Table 8 below, shows that the total numbers increased dramatically. In 2004, there were 45% more students graduating from Irish Universities than in 1994. During that period the population of Ireland was on the increase but the important point is whether or not the number of school leavers increased by anything like 45% as the majority of college entrants arrives directly from school.

In 1990, 60,074 students completed the Leaving Certificate. Subsequently, the totals rose up to a peak in 1998 when 65,922 sat the examination. After that, due to demographic changes in Irish society, the number of school leavers declined. By 2001, the number sitting the Leaving Certificate was down to 59,537, below that of 1990.

Table 8: Total Number of Graduates 1994-2004*

Year	UCD **	UCC	NUIG	TCD	NUIM	DCU	UL	TOTAL
1994	2,878	1,669	1,152	2,730	670	665	1,009	10,773
1995	2,991	2,000	1,254	2,706	604	935	1,098	11,588
1996	3,098	1,997	1,367	2,990	704	1,111	1,488	12,755
1997	3,177	1,939	1,275	2,967	711	852	1,352	12,273
1998	3,122	1,984	1,428	3,124	758	923	1,342	12,681
1999	3,242	2,068	1,608	3,118	808	983	1,391	13,218
2000	3,337	2,002	1,696	3,401	822	1,010	1,398	13,666
2001	3,161	2,197	1,659	3,336	821	1,099	1,585	13,858
2002	3,332	2,255	1,868	2,967	977	1,180	1,622	14,201
2004	3,421	2,687	2,339	2,427	1,175	1,343	2,243	15,635

* A small number of graduates are not included because they were identifiable as receiving unclassified Degrees and were therefore not included in this study; ** UCD figures include Arts Graduates

Those who graduated in 1994 would mainly have derived from the 1990 (N= 60,074) and 1991 (N= 61,333) Leaving Certificate cohorts, a total of 121,407 students. The 2004 graduates would have mainly derived from the 2000 (N= 63,419) and the 2001 (N=59,537) cohorts, a total of 122,956 students. This represents an increase of 1.8% in the number of Leaving Certificate students as compared with a 45% increase in the number of University graduates that followed on. Clearly the very large increase in participation at University was achieved largely through a marked increase in the proportion of school leavers pursuing Degrees. As discussed above in the context of the UK experience, it is not possible to achieve such a large higher education participation increase without lowering the real academic entrance standards.

Overall, the picture corresponds with the grade inflation theory. The reality is almost certainly one where there is grade inflation in the Leaving Certificate, which leads to an inflation in CAO points achieved, which in turn leads to higher minimum points being set for entrance to University courses. All of this serves to obscure a decline in the average academic suitability of successive University entrance cohorts.

3.3 Grade Inflation and Variance across the University System

As reported above, there was a 76% increase in the awards of First Class Honour Degrees and an increase of 39.2% in the award of 2.1 grades between the1994-96 and the 2002-04 periods.

This occurred at a time when the proportion of school leavers going to University was climbing steeply. At the same time, CAO points were on a steep ascending curve. Such modest increases in minimum points'

requirements for access to courses as occurred would have their impact in terms of academic standard more than vitiated by the sharply ascending points tallies being achieved.

Given the scale of the grade increases among graduates, nothing in the CAO points' analysis offers any ground for doubting the existence of a strong pattern of grade inflation between 1994 and 2004.

Two Universities stand out for different reasons on account of their grade patterns. NUI Maynooth (NUIM), though consistently at the bottom of the list in terms of the rate of Firsts and 2.1 grades awarded, had by far the highest level of grade increase. Dublin City University (DCU), though displaying relatively more modest rates of increase in grades, is a consistently high grade awarder, coming out at the top of the league table in 6 out of the ten years analysed for both Firsts and 2.1 awards.

It seems reasonable to predict that in the case of NUIM, the enormous improvement in grades between 1994 and 2004 (a 7.8 fold increase in Firsts and a 2.2 fold increase in Upper Seconds), if it is not to be accounted for by grade inflation, ought to be accompanied by some evidence of a transformation in the academic capabilities of students attracted to the University over the time frame involved.

As evident from Figures 1 and 2 above, the upward trajectory at NUIM in the award of higher grades did not become evident until 1998. The previous year (1997) is therefore taken as the first year for comparison purposes. The majority of those students would have entered college in 1994. The second year taken for comparison was 2004. Those graduates would have mainly entered in 2001. The 2004 graduates were eight and a half times as likely to obtain a First and two and a half times as likely to obtain an Upper Second as were the 1997 graduates only seven years earlier.

An analysis of the minimum entry points in 1994 and 2001 revealed that in reality little change had occurred in the intervening period. In 1994 NUIM offered entry to only four courses, all at minimum points between 340 and 370. In 2004 there were 15 courses with minimum points ranging from 305 to 535. Five courses had points in excess of 370. A crucial issue, however, is that those five courses had very small student intakes. In 2002, for example, the five courses had places for 2, 5, 11, 15 and 23 students. This total of 56 compared with a total of 1226 places, representing only 4.6% of all the places available at NUIM. Granted the figures are for 2002, not 2001, as 2002 was the only year in which the CAO published the number of places available. The relative numbers on courses do not generally fluctuate very widely from year to year so it is safe to assume that the few higher points' courses at

NUIM cannot have had much of an impact on the overall rate of grades awarded. The three courses, which together account for the lion's share of entrants to NUIM, existed in both 1994 and 2001. In 2002 they accounted for over 80% of the places in the University. The three – Arts, Finance and Science – either showed no change in minimum entry points or, in the case of Science, showed a drop between 1994 and 2001.

There are no detectable signs of any transformation in NUIM's capacity to attract more academically capable students as the years progressed. Given the marked increase in overall CAO points and the strong risk of grade inflation in the Leaving Certificate, described above, it is very likely that NUIM witnessed a significant decline in the average academic ability of its student body over the period.

The pattern at NUIM, therefore, adds further weight to the overall conclusion that grade increase in the University sector is due to grade inflation. There is evidence that within NUIM there is concern about grade inflation. The minutes for the meeting of Feb 14, 2006, of the University's Teaching and Learning Committee included the following statement:

> External examiners have expressed concern over the Preponderance Rule and grade inflation – the Registrar noted that there was grade inflation but that according to the Report[5], the Preponderance Rule had not been a significant factor (NUIM, 2006, p.3)

The 'Preponderance Rule,' alluded to above, is a provision in NUIM whereby the lowest marks in one sixth of the modules in a subject are discounted in calculating student grades. While this rule may not be contributing much to the level of grade increase in recent years, it is inevitable that any system that allows evidence of poor academic performance to be ignored will have inflated grades since that approach was adopted.

As for DCU, it seems reasonable to expect that, given its consistent high grades profile, it should stand out as a University that manages to attract more than its share of entrants with unusually high academic ability. It should, therefore be distinguishable as an institution with a high proportion of high points' courses.

As evident from tables 9 and 10 below, this is not the case. Neither over the 1992-93 nor over the 1998-01 periods, does the points' requirements at DCU show any sign of exceeding the overall average.

[5] An internal NUIM report entitled 'Interim Report of the Working Group on Marks and Standards.'

Table 9: Minimum points' comparison between DCU and all seven Universities 1992-1993

Minimum Points	% of courses DCU	% of courses All Universities
Less than 350	12.8	21.0
Less than 400	48.7	47.7
Less than 450	97.4	76.8
Less than 500	100.0	89.6

Table 10: Minimum points' comparison between DCU and all seven Universities 1998-2001

Minimum Points	% of courses DCU	% of courses All Universities
Less than 350	21.6	17.9
Less than 400	50.3	39.4
Less than 450	76.6	66.4
Less than 500	94.6	85.9

In comparison to the overall University sector, DCU had somewhat fewer courses with entry points at the upper end of the scale. As in the case of NUIM there is nothing to suggest that higher grades at graduate level are related to the academic profile of students entering the University.

3.4 The Validity of Course Entry Points as a Measure of Student Ability

There are three reasons why one might have some reservations about the use of minimum entry points.

Firstly, the minimum entry points for a course indicate the lowest level at which students were admitted to it but do not indicate the distribution of points among those actually admitted. It would, in principle, be quite possible for a course with low minimum entry points to have relatively few students entering at or near that level and the majority entering with much superior points.

The second problem with minimum entry points is that they take no account of the numbers of students admitted to each course, which vary widely. If entry points matter, a course admitting 100 students at, say, 450 points can be expected to have ten times the impact on the University graduate grade profile of another course admitting 10 students at the same points' threshold. By the same token, two Universities could have the same number of courses and an equivalent minimum entry profile but, if in one a few high points courses account for the majority of students and in the other a few lower

points courses account for the majority, then it would be reasonable to expect a better graduate grades' profile in the former.

The third problem concerns the capacity of Leaving Certificate results to predict performance in University. Given that academic ability and motivation to study and learn must surely have a very similar impact on the performance at both second and third level it would be surprising if Leaving Certificate results failed to predict, to a moderate extent at least, performance in University. If, however, for unknown reasons different factors were to predict success in the two sectors, minimum course entry points might have no value at all in predicting graduate grades.

Addressing the first problem, one way to check if minimum points tend to predict *typical* points is to compare minimum points with the average or central tendency of points on each course. The only year for which the HEA published such information was 2002, when in addition to minimum points at which students were accepted on each course, median points and the number of places on each course was published on their web site.

An analysis of the minimum and median points across all courses in the seven Universities in 2002 revealed a very strong correlation between the two ($r = .8969$). This strongly supports the use of minimum points as indicative of typical student ability.

As for the problem of courses differing greatly in the number of students admitted, this would not be an issue with respect to minimum points if there were no connection between minimum points and the number of students admitted. It was possible to check for the correlation between minimum points and numbers admitted for 2002. The correlation coefficient was $r = .04662$, demonstrating that the two factors are unrelated, at least for 2002.

Concerning the possibility that Leaving Certificate performance might not predict Degree performance, fortunately there is a recent study which demonstrates the expected connection. The unpublished study, carried out by the National University of Ireland, examined the Arts, Commerce, Science and Law graduates in NUIG, UCC and NUIM in 2003 and in UCD, NUIG, UCC and NUIM in 2004. It revealed that students entering with points over the 505 mark were roughly three times more likely to graduate with First Class or Upper Second Degrees when compared with students entering on points below 405 (NUI, 2005).

The very strong correlation between minimum and median points, the absence of any correlation between minimum points and the number of students admitted and the evidence of a robust connection between Leaving

Certificate and Degree performance lends support to the use of minimum points as a mechanism for tracking, albeit imperfectly, variations in student academic ability entering University.

3.5 Median Course Points and Graduate Grades

Using the detailed figures available for 2002, it was possible to carry out a more precise comparison of the seven Universities to see if they differed markedly in terms of the average ability of students admitted. This analysis took into account the median points for each course and the number of students admitted. For each course, the number of places was multiplied by the median points. The resulting figures were summed within each University and divided by the total number of places across all courses in the University. The effect is to accord each student an entry point figure that is the median points for the course on which he or she has entered and to find the overall mean or average of those points. The outcome, the mean of the weighted median course points should closely approximate the average points for all students entering each University that year. It is, therefore, a quite precise index of the student ability level entering each University.

Table 11 below lists the mean of the weighted medians for each University

Table 11: Typical student entry points 2002

University	Mean of weighted median points 2002
TCD*	464
UCC	451
UCD	447
NUIG	438
DCU	434
UL	430
NUIM	397

* TR001 (Two-subject moderatorship) not included as median points were not published for that course.

As is evident from the table, the Universities did in some cases differ considerably on the points' profile of students admitted. A comparison of the rank order in the table with the rank order for the award of higher grades, as illustrated in Tables 1 and 2, leads to some interesting observations.

It might be expected (assuming the figures for 2002 are generally indicative) that Universities awarding higher proportions of Firsts and Upper Seconds would be those attracting, on average, higher points students. As discussed above, DCU stands out as the most prolific awarder of higher grades over time, yet is ranked fifth out of the seven Universities in terms of typical

student entry points in 2002. This is consistent with the conclusion drawn above from an examination of minimum entry points.

TCD stands out as the clear leader in terms of student entry points, yet throughout the eleven year period analysed was second from the bottom as regards the award of Firsts and Upper Seconds. As indicated in Table 11 the figure for TCD excludes one large course. Could this have significantly affected the TCD figure? The course accounted for a total of 657 students across 22 specialities, for each of which separate minimum points were reported. Over two thirds of the entrants chose specialties with minimum points of 430 or above and approximately one third specialities with minimum points above the 464 mark listed in Table 10 above as the typical entry points for students across TCD as a whole. It seems unlikely, then, that the figure of 464 would reduce in any significant way if this course could have been included in the analysis.

There is some evidence in favour of the expected link between points and grades achieved. NUIM, for example, occupies the lowest rank on both scales. Nevertheless, it is not possible to discern any consistent connection between typical entry points and grades awarded across the Universities. The proportion of students with higher entry points may well play some role in institutional differences in grading but other more important factors are at work as well.

3.6 Conclusions on Grade Inflation

The rate of award of higher grades increased dramatically across the whole of the Irish University system between 1994 and 2004. In the latter years of this period graduates were on average 76% more likely to achieve a First and 40% more likely to achieve a 2.1 than were their predecessors in the earlier years.

This dramatic grade increase occurred at a time when there was a rapid rise in the proportion of school leavers entering University, a development that would inevitably have exerted a downward effect on the average ability of successive entrance cohorts. At the same time, the tally of CAO points being won by Leaving Certificate students was on a rapid upward trajectory. The proportion of CAO applicants able to access courses set at a minimum of 400 points went up by 51.8% between 1994 and 2004, while the proportion able to access 500 point courses jumped by 121% over the same time period. This was almost certainly accounted for largely by grade inflation in the Leaving Certificate (O'Grady and Guilfoyle, 2007b, forthcoming).

Such modest increases as did occur in minimum points required to access University courses were more than offset by the steep climb in overall CAO points being achieved. There is nothing to suggest that the academic suitability of entrants to the Universities improved over the time scale of this study. If anything, it is more likely to have declined on average. Comparing Universities with higher and lower grade awarding profiles and greater or lesser grade increases over time, the academic ability of the students they attract does little to explain the differences among them.

On the basis of the extensive evidence adduced in this study, a conclusion of very significant grade inflation is warranted to explain the rapid increase in higher grades across the whole University system between 1994 and 2004.

4. Discussion

4.1 Grade Inflation or Justified Increase Revisited

It was stated in the introduction that the onus should be upon those responsible for examinations to prove that grade increase is not grade inflation. In the absence of any such proof being put forward, there is no reason not to consider what kind of evidence might help settle the question either way.

Is there any realistic possibility that the rapid grade increases at Leaving Certificate and graduate level are genuinely a function of students achieving a better standard of learning? This is the dilemma posed by the grade inflation possibility. If the accuracy of the yardstick normally used to measure learning – grades in examinations – is under suspicion, by what metric do we evaluate it?

Even in the absence of any objective measure by which to check the standard of examinations over time, there are sources of evidence that tilt the axis towards or away from a conclusion of grade increase as improvement in learning.

In broad terms, learning may be assumed to be impacted on by three proximate factors: level of ability, level of motivation and nature of educational input.

If a case can be convincingly advanced that one or more of those factors has been shifting in a positive direction over time, real grade improvement, representative of enhanced learning, would be expected over the same timescale.

Is there any evidence that between 1994 and 2004 any or all of those factors showed a constant positive shift? Under what circumstances might we expect such a development?

4.2 Changes in Levels of Ability

Progressive increase in the average ability among second and third level students could be caused by a selection effect: where educational access is increasingly, year on year, a function of academic ability. This would occur across society only where the numbers progressing through the educational system are being increasingly constrained allowing only the more capable to advance. The reality at both Leaving Certificate and Degree level has been

quite the opposite. The proportion of students completing the Leaving Certificate cycle has remained largely static since 1991 at 79-82% (Gorby, McCoy and Watson, 2005). The proportion going forward to third level education has increased dramatically from 25% of the school leaving age cohort in 1986, to 36% by 1992, 44% by 1998 and 54% in 2003 (HEA, 2005). As described above, the number of University graduates increased by 50% between 1994 and 2004, while the number of school leavers rose by only 1.8%. Given the quite fixed nature of ability across such relatively short time spans in society and given the manner in which it is distributed, there is no realistic possibility that Leaving Certificate or Degree candidates have grown more able over the eleven years of the study. Indeed, increasing participation rates have most probably exerted a downward effect on average ability in successive cohorts.

4.3 Changes in Level of Motivation

Might overall student motivation to learn have significantly increased with each passing year? While the reality of intrinsic motivation to learn is not to be denied, it is much more likely that if students became significantly more motivated it is because they were increasingly being convinced that good results in examinations were desirable and they were becoming more single minded in their pursuit of better grades. The primary objective to obtain qualifications and better grades is to achieve educational and ultimately career advancement. Was there anything happening between the early years of the nineteen nineties and the early years of the twenty first century that might account for students countrywide growing more convinced that they needed better grades to get on in life with the effect that, with each passing year, students applied themselves more diligently? Again, reality appears to point in the opposite direction.

The most obvious source of a greater need for higher grades is to compete with others in similar circumstances for access to limited course places and job opportunities. If the nineties and the early twenty first century had been a period of educational retrenchment and declining job opportunities, this might be expected to greatly increase competition among students and enhance motivation to succeed. However, the period in question was one of enormous expansion in higher education. In the academic year 1990/91 there were 68,165 students studying at third level in Ireland. By 2001/02 that figure had grown to 124,589 (HEA, 2007). It was also a period of unprecedented growth in wealth and employment in Ireland. Between 1988 and 2004 there was a 67% increase in the total number in jobs in the state (Sweeney, 2004). A historical problem of employment scarcity was replaced by the opposite problem of labour shortages. For the first time in its history,

Ireland achieved full employment. Students had less reason than ever to compete with each other. There were opportunities aplenty for all.

An inevitable corollary of full employment is the attraction of a large cohort of part-time workers including students into the active economy. For example, of the additional 214,700 jobs created between 1992 and 1997, 62,500 were due to part-time work, the vast majority of which were occupied by individuals who were not seeking full-time employment (ServiNews, 1997).

That students have become very significant participants in the part-time labour market is evident from a number of surveys. Morgan (2000) found that three quarters of post primary students (excluding transition year) in Dublin had part-time jobs. One tenth worked as many hours as they spent at school. Very little of the motivation to work related to economic necessity with only 5% reporting that they contributed in any significant way to the family and most of the income generated being described as spent on entertainment, holidays, fashion, and alcohol.

Commenting on the survey results Dr Morgan states

> *The present results demonstrate how the country's economic success is having an adverse effect on the educational system, especially on those young people who will be most vulnerable in the event of an economic downturn* (Morgan, 2005, p. 5).

A subsequent ESRI study revealed that, nationwide, the combining of school and part-time work was the norm, with over 60 per cent of Leaving Certificate students having a regular part-time job (McCoy and Smyth, 2004).

Clear evidence that significant involvement in part-time employment continues into third level education comes from an ESRI study which found that 43% of full-time third level students worked regularly with an additional 20% reporting as working occasionally while at college (Smyth and Darmody, 2005).

Prior to the 1990s, the problem of unemployment and the scant availability of jobs prevented the majority of full time students in Ireland from devoting much time and energy to employment. It stands to reason that many students, who devote a considerable amount of time to part-time work, will not have sufficient time and energy remaining to spend at study. This should in logic have exerted a downward pressure on the motivation to learn which has had to compete with the motives to earn and spend.

With respect to spending, there is a further related trend that derives from the income available to students through part-time employment. Morgan

(2000), as mentioned above, identified that secondary students spent most of their income from part-time work on discretionary items such as holidays, fashion, entertainment and drink. This pattern very likely continues into third level education. There is extensive evidence that young people consume far more alcohol now than in former decades. As a nation we increased our per capita consumption of alcohol by a staggering 40% in the decade1989-1999 (Dept of Health, 2002). A variety of surveys have shown that the age of commencement of drinking has gone down significantly over the last decade and a half, while the frequency and level of drinking among young people has increased very substantially (Morgan and Grube, 1997; ESPAD, 1995, 1999, 2003). The heaviest drinkers in Ireland and those who are more likely to binge drink, a type of drinking generally associated with more adverse consequences, are those aged 18-29, the age group to which most students belong (Ramstedt & Hope, 2003). Research at University level has identified a direct association between students drinking and experiencing difficulties in college such as failing exams (Canavan 1999; O'Malley & Doran, 2001).

In summary, the evidence is that the period of this study did not correspond to one in which it is likely that students became increasingly more motivated to study and so devoted more of their energies to that end. On the contrary, the economic and social developments were such as to lead to an expectation of diminishing motivation and effort.

4.4 Improvements in Educational Inputs

The third proximate cause of improved learning identified above was the nature of educational input. If the quality of educational delivery showed a pattern of progressive improvement in the nineties and the early years of the twenty first century, then that should have led to improved educational performance. The improvement could be at any stage prior to graduation, at primary, secondary or third level, since earlier gains in learning would set students up more effectively to deal with the demands of subsequent courses.

Have such improvements occurred and, if so have they been of the scale required to explain the level of grade increase experienced between 1994 and 2004? A further challenge to improved education as an explanation is that it has to overcome the downward effects on average ability, as discussed above, of greater progression rates into University.

An immediate problem arises in identifying improvements in education – how to define what is in fact an improvement. Two obvious solutions occur. One is to identify specific educational methodologies or techniques introduced that have been shown through sound research to bring about genuine improvements in learning. The other is to find evidence of improvements in

results over time in objective measures of educational attainment such as literacy and numeracy. This latter approach suffers from the interpretive disadvantage that if such improvements in outcomes are detected, it does not necessarily follow that they have been due to changes in educational inputs. It may be possible, however, if the improvements are widespread in society and unrelated to demographic, social class or other broad societal changes to fairly attribute the cause to educational inputs by a process of elimination.

In the search for improvements in educational inputs, a logical approach is to focus on objective measures of educational attainment up to school leaving age or entrance to college and to seek out changes in educational methodologies in University that have proven causal links with learning.

There is a dearth of useful research in the period of this study (1994 -2004) that might offer insights into graduate performance. There is, however, some subsequent informative research. In 2000 an objective assessment of educational achievement of 15 year olds in Ireland was conducted as part of the first cycle of the OECD Programme for International Student Assessment (PISA). The study evaluated performance in reading, mathematics and science. Crucially for present purposes, the second cycle of PISA was conducted in 2003. Comparing the performance of 15 year olds in Ireland three years apart, it was found that there was no change in science or mathematics but that there was a decline in reading standards, particularly at the upper end of the performance scale (Cosgrove et al, 2004). As evident in Figure 3 above (p. 16), grade increase has continued at Leaving Certificate level up to the present, suggesting that earlier grade increases have also been a function of grade inflation rather than genuinely enhanced learning.

Further evidence that there is no trend of underlying improvement in learning accompanying grade increases reported comes from a representative nationwide study of reading standards among fifth class pupils in primary school in 2004. It found no change in the overall standard of reading since a previous similar survey conducted in 1998 (Eivers et al, 2005).

What of the possibility of productive changes in educational methodologies across the Universities? To result in the ubiquity, continuity and scale of the grade increase described above, such changes would have to be dramatic, universally applied and progressively more effective over time. Nothing at all has been reported from the University sector that in any way meets those criteria.

Far from being in a position to employ revolutionary new educational approaches calculated to lead to large grade gains at the upper end of the scale, there is evidence that, in keeping with the pattern in the US and the

UK, Irish Universities are having to devote more effort to remedial interventions. These are focused at offsetting the deficiencies in literacy, numeracy, motivation and study skills increasingly identified among college entrants (McGuinness, 2004; Flanagan and Morgan, 2004).

The notion of learning styles permeates discourse about teaching in higher education. Coffield et al (2004) cast significant doubt on the validity of learning styles in their extensive review of the literature on this subject. They reported that the notion that students' learning can be enhanced by their individual learning styles being measured and matched in the teaching process is an intuitively appealing notion without any sound scientific foundation. Such a focus on empirically foundationless methodologies does not suggest that Universities in Ireland have become privy to some innovative educational approach which produces year after year grade gains for graduates.

4.5 Conclusion

Given the dramatic nature of the increase in higher grades awarded in the Universities and the weaknesses in the case that such increases are due to improved learning in more recent years, grade inflation seems unavoidable as an explanation.

It would seem that NUI Chancellor Garrett Fitzgerald was somewhat belated in his warning that we run a risk of following the British grade inflation drift when he wrote:

> *What is less clear is that threats to the present strengths of our system, some of them quite subtle, are equally well understood by Government.*
>
> *One of these threats derives from pressure to follow Britain's disastrous mistake in "dumbing down" higher education by diluting standards. Pressure in favour of this exists here both within the system itself - due to some competitive factors - but also externally from the political system, which tends to seek increases in the output of higher education while holding back on the resources needed to secure such an outcome……..*
>
> *….The lesson of recent British experience is before us. For, even in the better Universities in Britain there has been considerable "grade inflation" involving an unjustified expansion of the number of first-class honours or other good degrees which has served to weaken business confidence in the system* (Fitzgerald, 2006).

The National Qualifications Authority of Ireland (NQAI), a state agency entrusted under the Education & Training Act 1999 with a variety of functions associated with the maintenance of a coherent and high quality system of awards in higher education, has expressed the view that:

> …….. *the system of award classifications in Ireland is well established, well understood and accepted as a reliable indication of academic performance and achievement* (NQAI, 2005, p59).

Both Dr Fitzgerald and the NQAI now appear, in the light of our findings, to be overly optimistic in their analyses. It is clear from the research described in this paper that the Irish Universities began to follow the British grade inflation trend more than a decade ago. If the rate of increase identified above were to continue unabated, within 30 years no graduate would be awarded less than a First Class Degree in Irish Universities. This illustrates the pernicious and entirely unsustainable nature of grade inflation. The deleterious implications of the phenomenon are discussed in detail by O'Grady and Quinn (2007b).

Increasingly, degree grades are becoming a less 'reliable indication of academic performance and achievement.' The challenge now facing educationalists and policy maker is to arrest the grade inflation process without delay before the standard of Degrees in Ireland is further undermined.

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