

Rising Grades: A Review

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Abstract

Grade inflation has been an issue in academia since the 1960s. Average grades in American colleges and universities today are markedly higher than they were decades ago. The prevalence of grade inflation over the last several decades is becoming one of the stylized facts about the higher education world. Most agree that significant grade inflation in the United States began in the 1960s, stabilized in the 1970s, somehow resumed in the mid-1980s and has yet to end. Grade inflation not only occurs in the United States but also appears internationally. The most serious concern is not the overall grade inflation. Instead it is the accompanying distorted grade distribution. The closer the curve gets squeezed to the ceiling, the harder it is to make distinctions and the less incentive students have to do their best. As a result, it becomes difficult to discriminate the best from the very good, the very good from the good, and the good from the mediocre. This study reviews the existing literature on grade inflation. It is our hope that our review can stimulate further academic inquiry into inflationary grading practices. This review discusses both the production-function framework and the human-behavior model in an attempt to understand inflationary grading practices.

Keywords: Grade Inflation, Grade Distribution, Human-Behavior Model

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1. Introduction

Grades are devices used by faculty to motivate students, to maintain academic standards, and to provide summaries of student progress. They are also used by graduate schools and employers to identify promising candidates. However, as indicated by Rojstaczer and Healy (2010), there is much variability in grading from one school to the next and even between various areas of study. This could be because the grading of students at American colleges and universities incorporates a system of standards that is almost always unregulated.

According to Rojstaczer and Healy (2012), implicit in the use of our grading system is the belief that it has “value” both as a motivator of students and as a tool for postgraduate schools and employers to identify the best and brightest. The underlying assumption is that college instructors understand that a grade should reflect an instructor’s true view of student performance and hence they will individually regulate their grading practices out of a sense of personal integrity. Yet, grade inflation has been an issue in academia since the 1960s. Grade inflation is the tendency to award progressively higher academic grades for work that would have received lower grades in

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the past. In other words, it is an increase in reported grades unwarranted by student achievement (Stone, 1995).

Average grades in American colleges and universities today are markedly higher than they were several decades ago. A recent empirical study by Rojstaczer and Healy (2010) found clear evidence of nationwide grade inflation over time and regular differences between classes of schools and departments. In 1960, the average Grade Point Average (hereafter: GPA) was about 2.4 or around a C+. However, by 2006, this number was about 3.0, or roughly a B, and even higher in private institutions. Moreover, according to Deresiewicz (2014), GPAs have been rising for many decades. In 1960, the average GPA at private universities was about a 2.5. In 1990, it was about a 3.1. In 2007, it was 3.3, and at highly selective private schools, 3.43.

The closer the curve gets squeezed to the ceiling, the harder it is to make distinctions and the less incentive students have to do their best. Indeed, according to Cole (1993), by rewarding mediocrity, we discourage excellence. Many students who work hard at the outset of their college careers, in pursuit of good grades and honors degrees, throw up their hands upon seeing their peers do equally well despite putting in far less effort. Thus the most serious issue is not the overall grade inflation. Instead it is the accompanying distorted grade distribution.

In 1940, 15 percent of grades fell within the A range; in 2008, the number was almost 45 percent. At elite schools, at this point, if a student does the required work, in some form or fashion, it is almost impossible to give him or her less than a B-plus, and even, increasingly, an A-minus. Hence GPAs today institute a negatively skewed grade distribution where more than 50% of students will obtain at least a B-plus. If this trend continues, college GPAs will no longer serve their purpose of revealing valuable information about an individual's absolute and relative abilities. Potential employers' choices about whom to hire as well as administrative choices about where to allocate academic support services will, as a result, be seriously undermined.

Grade inflation has been a topic of research interest for at least a century (Durm, 1993; Juarez, 1996; McKenzie, 1979), but debates on the issue are usually restricted by a lack of data. Due to issues of data availability, nation-wide evidence is very limited (but see Juola, 1976; Rojstaczer and Healy, 2010, 2012). Instead, some researchers have attempted to study this issue locally at the university or college level (e.g. Butcher, McEwan, and Weerapana, 2014; Carter, Wiant, and Allen, 2008; McSpirit, Jones, Chapman, and Kopacz, 2000). In any case, many explanations of rising grades have been provided and studied. Our objective in this study is to synthesize this extensive work on grade inflation. It is our hope that our review can stimulate further academic inquiry into inflationary grading practices. We do not claim to provide an exhaustive review of this literature, especially since our views, interests, and backgrounds largely influence our emphasis and inference.

In the next section, we provide a summary of the grade inflation literature. Section 3 then details several theoretical frameworks that have been adopted by researchers in an attempt to understand inflationary grading practices. Section 4 concludes.

2. A Summary of Previous Work on the Grade Inflation Phenomenon

The phenomenon of rising college grades was identified quite early on. Some earlier empirical studies on selected American colleges and universities found that the GPAs of undergraduate students showed a rising trend from the 1960s to 1980s (Birnbaum, 1977; Kolevzon, 1981). More recent studies of similar scope have also identified grade inflation since the 1980s (Carter, Wiant,

and Allen, 2008; McSpirit, Jones, Chapman, and Kopacz, 2000). The study by Sabot and Wakeman-Linn (1991) implies that grade inflation is common throughout the United States. Although large scale systematic studies on grade inflation are limited, published reports that are based on a wide variety of institutions indicate that inflated grades have quietly become the norm.

The prevalence of grade inflation over the last several decades is becoming one of the stylized facts about the higher education world. Most agree that significant grade inflation in the United States began in the 1960s, stabilized in the 1970s, somehow resumed in the mid-1980s and has yet to end. Therefore, it is only reasonable to group our discussion of the phenomenon of grade inflation into two time periods – pre mid-1980s and post mid-1980s.

2.1. Pre mid-1980s

Grade inflation in the 1960s is commonly attributed to the Vietnam War (1955-1975). In the 1960s and early 1970s, faculty were reluctant to assign male students' low grades when warranted because it would put the student at risk of having to leave school and possibly be drafted into military service in Vietnam. As a result, instructors largely abandoned D's and F's so that students could avoid the Vietnam-era military draft. By analyzing the data from a 1974 national survey of 134 colleges, Juola (1976) documented that GPAs had increased 0.404 points from 1965 to 1973. The same pattern and magnitude of change were revealed for college subgroups classified on the basis of size, geographic area, degrees offered, etc. To further verify that the observed grade increase was not merely grade fluctuations due to some external factors, the author charted annual changes in GPAs at Michigan State University back to 1941. Some grade fluctuations did occur, but they never moved more than one-tenth of a grade point from a base level of 2.4. Earlier studies on grades distributions from university-based data (e.g. Juola, 1976; Perry, 1943; Suslow, 1976) suggested that prior to the 1960s, C was the most common grade. This finding implied a normal distribution in professors' grading practice. However, by the mid-1960s, C+ had replaced C and became the most usual grade while D's and F's were becoming less common. At the end of the Vietnam era, grades had been raised to a level where a B-range grade was the new average, resulting in a skewed grade distribution. Students' average grades only declined slightly in the years post-Vietnam era, and there was no indication that GPAs were returning to their earlier levels. Clearly, professors as well as students were used to the skewed grading practices.

2.2. Post mid-1980s

Grade inflation paused slightly after the end of Vietnam War in 1975. Nevertheless, grade inflation resumed in the mid-1980s and the grading distribution was unfortunately further distorted. According to Rojstaczer and Healy (2012), unlike in the 1960s, grade inflation was no longer raising all boats in the late 1990s. It was elevating the grades of the good and mediocre. It was still possible for a significant number of students to fail. Hence, D's and F's were not abandoned entirely. However, by the late 1990s, A's and B's represented 73% of all grades for public schools and 86% of all grades for private schools in their database. Clearly, the grade distribution was becoming much more compressed at the top. It implied that as long as students showed some effort, they would be almost always considered good to excellent in quality. It also made it difficult to discriminate the best from the very good, the very good from the good, and the good from the mediocre.

Some analysis on self-reported student data also suggested significant rises in GPAs (e.g. Kuh and Hu, 1999; Levine and Cureton, 1998). By analyzing a large-scale student database from

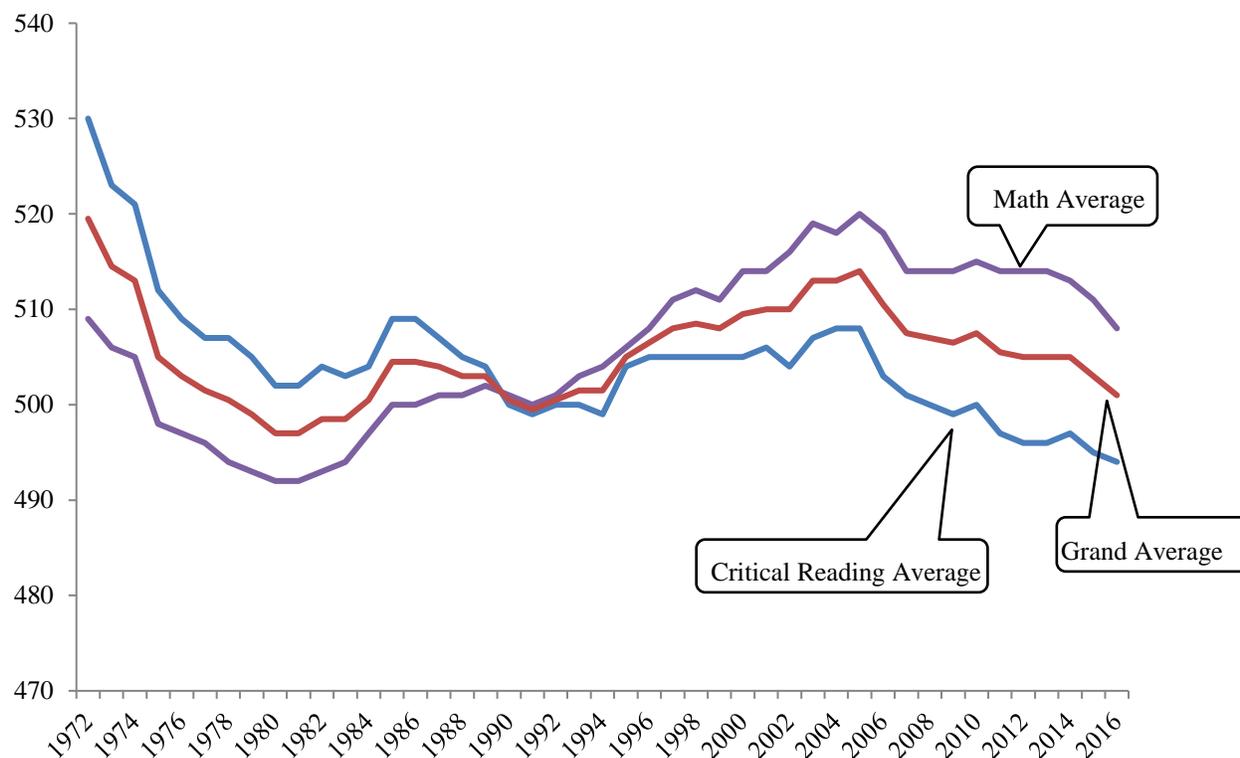
the College Students Experiences Questionnaire Research and Distribution Program in different time periods – namely, the mid-1980s and mid-1990s—Kuh and Hu (1999) reported that undergraduate grades increased across different types of institutions and major fields, although the increases were not of the same magnitude nor due to the same factors. The average student self-reported grades rose significantly from 3.07 in the mid-1980s to 3.34 in the mid-1990s. However, at the same time, there was a small but statistically significant decline in the number of hours students devoted to school work, from 3.27 in the 1980s to 3.11 in the 1990s. Statistically significant decreases were also found for student course learning effort and the frequency and quality of students' interaction with faculty.

2.3. Grades and Effort

If students' grades rise along with improving student achievements, grade inflation is then not a concern. In other words, students are smarter than before; therefore, they obtain higher absolute grades. Several research efforts tried to make this argument but did not seem to be conclusive. Rejection of this argument is supported by studies on Scholastic Aptitude Test (hereafter: SAT) scores. The SAT scores of college-bound seniors from 1972 to 2015 (College Board, 2015), shown in Figure 1, reveal stagnant test scores. There is very little evidence supporting an improvement in student achievements, yet grades are rising. Likewise, by studying the results from the 2003 National Assessment of Adult Literacy (NAAL), Kutner, Greenberg, and Baer (2006) show that although the average quantitative literacy scores of adults increased by 8 points between 1992 and 2003, the average post and document literacy did not differ significantly from 1992. Their study suggests that on average the literacy of graduates is at best stagnant. Hence, if Scholastic Aptitude Test scores are acceptable indicators of academic ability, they indicate a downward rather than an upward trend in student intelligence.

Further, according to Saenz and Barrera (2007), students are increasingly disengaged from their studies. Babcock and Marks (2010) document declines in academic time investment by full-time college students in the U.S. between 1961 and 2003 in multiple time-series datasets. Full-time students were studying about 13 hours a week less in 2003 than they did in 1961. They concluded that there have been substantial changes over time in the quantity or manner of human capital production on college campuses. If student effort is a meaningful input into the education production process, then declining time investment may signify declining production of such human capital. Yet, colleges and universities are awarding significantly higher grades despite national declines in student achievement and involvement.

Some have argued that students' grade may be improving due to the rise in the number of women as a percentage of total national undergraduate enrollments. Women began to increasingly enter colleges and universities in the 1960s and 1970s. However, the gender ratios stabilized in the 2000s, after rising since the 1970s. Much of that rise took place during a period when grades, on average, fell slightly. Hence, neither student achievement nor women's participation in college education seems to be a valid justification for rising grades.



Data Source: College Board

Note: Due to SAT's massive redesign in 2016, the scores of 2017 and onward were not used for comparison purposes.

Figure 1. SAT Scores of College-Bound Seniors, 1972 ~ 2016

2.4. International Evidence

Grade inflation not only occurs in the United States but also appears internationally. For instance, according to Anglin and Meng (2000), grade inflation is an important overlooked dimension of the modern Canadian university. Grading offers an unobserved margin of adjustment that can be exploited. By using the information on first-year university grades from a survey of seven Canadian universities for the periods 1973-1974 and 1993-1994, Anglin and Meng (2000) found significant grade inflation in various Arts and Science programs. Yet the rate of inflation is not uniform. Some subjects experience little or no change in average grades while other subjects saw significant grade inflation. If grades do not indicate a student's strengths and weaknesses, then the expectation of a good grade in a certain discipline will influence their choice of courses (Sabot and Wakeman-Linn, 1991). By lowering the relative price of some subjects compared to others, students may choose the "wrong" field of study in terms of their own comparative abilities.

By analyzing the grading trends in all undergraduate degrees awarded through seven Irish universities in the years 1994 – 2004, O'Grady and Guilfoyle (2007) identified a very consistent pattern of quite dramatic grade increase across the entire University sector in Ireland during this period. The authors observed not only that grades rose very considerably over the years analyzed, but also that the greatest increase was at the First Class level (i.e. A). Over the 1994-1996 period there were 3.4 times as many Upper Seconds (i.e. B) as Firsts awarded, but in 2002-2004 the ratio

had dropped to 2.9. While both higher grades had become considerably more frequent, the top grade had become relatively more common.

3. Theories about Grade Inflation

A number of hypotheses have been put forward to explain grade inflation. Grades could systematically increase due to: (a) professors being more generous in grading a given group of students, (b) the quality of a group of students increasing over time, (c) teaching methods improving over time, and/or (d) certain random effects. Most scholars believe that hypothesis (a) is the most explanatory, and it also causes the greatest concern. The essential problem in verifying any of these hypotheses is that they rely on data that are not readily available.

The following theories have been proposed to explain the phenomenon of grade inflation.

3.1. Market Approach

Table 2 summarizes univariate asymmetric GARCH fit for oil return series. There is evidence of a strong leverage effect, i.e., adverse shocks or negative news is observed to have a higher degree of influence on the returns than that of positive news or shocks.

McKenize and Tullock (1981) offered one explanation in the context of the demand for and supply of university openings, or admissions. They argued that while there is excess demand on university openings, higher standards evolved for given effort and ability, thus resulting in lower GPAs. Yet if the growth in university openings outpaces demand, universities have to reduce the “price” to students by awarding higher grades for given effort. Similarly, in his study of the grading practices of faculty members at a university, Dickson (1984) argues that grading behavior is an economic phenomenon. He concludes that the lower the student-faculty ratio of a faculty member’s department, the higher the average grades given by faculty members in that department. This relationship is strongest in first-year courses. These results are attributed to faculty concerns about job security.

3.2 Production-Function Framework

Several scholars (e.g. Isely and Singh, 2005; Kelley, 1972; McKenzie, 1975; Zangenehzadeh, 1988) adopt a simple production-function framework, where a course evaluation outcome is considered as a measurement of the educational output of professors. Following this framework, empirical studies estimate a single-equation production function in an attempt to identify the anticipated positive impact of students’ grades on the course and professor ratings. It is generally held that a student’s expectation about her/his course grade constitutes a positive impact on student ratings, although the quantitative impact may not be important. However, researchers soon realized that course ratings and grades share a reciprocity relationship. Instead of estimating a single-equation production function, some scholars attempted to estimate their relationship using a simultaneous-equations framework, which assumes that the two variables are simultaneously determined. Examples can be found in Seiver (1983) and Zangenehzadeh (1988).

In a system of simultaneous equations, Zangenehzadeh (1988) demonstrated the interrelationship between grade inflation and student ratings of instructors. A student who expects a good grade will remunerate the instructor. Most interestingly, while Zangenehzadeh (1988) adjusts instructors’ evaluation ratings using a methodology he proposes, the adjusted ranks differ substantially from the unadjusted ones. This outcome suggests a great incentive for instructors to inflate grades. By estimating instructor and course-specific fixed effects in a variety of fixed-effects models, Isely and Singh (2005) also found that higher expected grades do influence

students' evaluation of teaching. By comparing the average grades given in 165 behavioral and social science courses with the average ratings given by students to the instructors, Ellis, Burke, Lomire, and McCormack (2003) found significant positive correlations between the average ratings for instructional quality and the average grades received by students. Students tend to bias their ratings of instructional quality in favor of teachers who grade generously.

3.3 Human-Behavior Model

While a production-function framework enables researchers to analyze and test the relationship between GPAs and students' ratings of courses and professors, it says very little about the motivation's professors have to inflate grades. Arguing that this problem had not been adequately conceptualized, McKenzie (1975) developed an economic-choice model of human behavior.

Students' evaluations of teaching reflect the degree to which the course and instructor agree with the students' preferences for factors such as grades and leisure time. Therefore, the higher the relative utility the student acquires from attending a class taught by a given professor, the higher his or her rating will be for the instructor and the course. A student's utility level is a function of two goods - grades and leisure time allowed. Higher grades are preferred to lower grades. In this two-commodity model, if a professor increases the instruction efficiency with which students can grasp the materials while keeping her grading standard constant, a student's "budget curve" will shift out to the right. She or he will be on a higher utility level resulting in a higher rating for the instructor. However, increasing instructor efficiency can be costly or even risky to the instructor because it requires more effort and hence imposes dis-utility on the instructor. The instructor's attempt to improve instructional quality may be largely offset by the fact that students dis-prefer or even are incapable of handling a demanding course. Alternatively, the professor can change her grading structure to achieve an equivalent positive effect on students' ratings. Therefore, in the context of judgments about the quality of a professor, the model suggests that student ratings can be manipulated by the instructor's grading structure. If two professors are distinctly different in the eyes of the students, one being "better" than the other, the instructor who would have otherwise had the lower rating can at least partially offset the differential by easing up in his or her grading practices.

Moreover, students who take classes from faculty who grade leniently have a better chance of finishing college with higher GPAs – and thus being better post-undergraduate prospects – than do students who take most of their classes with instructors who grade more stringently. Students respond to this reality in two ways. First, they would much prefer enrolling in classes with instructors who grade generously. Second, they provide more favorable course evaluations for these instructors. The latter is the argument by the proponents of grade-lenieny theory, according to which students simply reward leniently grading instructors with higher course evaluations. Since outcomes derived from the students' evaluation of teaching are tied to a faculty member's career prospects, professors unfortunately respond by lessening their requirements and escalating grades to meet student expectations. Grade inflation ensues when stringently grading professors chase their more leniently grading colleagues toward the beginning of the alphabet (Johnson, 2003).

4. Conclusion

The crude oil price has a very pivotal role to play in any economy in general. India imports approximately 70% of its crude oil requirement with a significant burden on its exchequer (currently at approximately \$62 billion). Jain (2013) found the significance of oil price on

macroeconomic variables such as the wholesale price index, and stock market movement, etc. Srithar et al. (2015) documented that the crude oil price plays an important factor in the GDP growth rate of India.

This review summarized the phenomena of rising college grades since the 1960s. Average grades in American colleges and universities today are markedly higher than they were decades ago. Yet the rising grades are not warranted by increasing student achievement. For the years prior to the mid-1980s, the Vietnam War is a clear external factor that led faculty to inflate grades. However, for the period after the mid-1980s, we contend that there are other motivations to raise grades.

As suggested by the production-function framework and the human-behavior model, grade inflation is the outcome of a mixture of factors. Students' evaluation of teaching serves as an important channel through which teachers obtain valuable feedback from students. However, empirical studies suggest that students' grades and the evaluation outcomes are positively correlated. Students seem to reward leniently grading instructors with higher course evaluations.

We believe that grade inflation is a very significant aspect of the world of higher education world and that it deserves more attention. There is a pressing need to understand the motivations that have led faculty to systematically grant higher grades since the mid-1980s.

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