

INSTITUTIONAL GPA INFLATION: THE EFFECT OF COURSE REPEAT POLICIES

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ABSTRACT

Grade point averages (GPAs) are universally used in higher education to measure student performance and are typically compared to either a specified standard or to other students' GPAs, both within and across institutions. The importance of the GPA as a metric cannot be overstated because of the myriad of ways in which it is used and the many stakeholders who rely on the information it provides. The validity of the GPA is dependent upon several factors including the methods of computation used. This research investigates specific university policies that govern the computation of the GPA and the possibility of these policies creating institutionalized GPA inflation. We focus specifically on course repeat policies because of their potential to create such inflation, and in so doing, to reduce the informational value of the GPA and diminish its utility for decision-making. A large national sample of AACSB institutions were examined for these policies and findings indicate widespread use of inflationary course repeat policies, confirming the existence of institutionalized GPA inflation. Association between course repeat policies and institutional characteristics including size, public/private status, mission and ranking was also examined, providing some insight into possible motivations behind this institutional policy decision.

INTRODUCTION

Grade point averages (GPAs) are universally used in higher education to measure student performance. Typically, GPAs are compared to a specified standard or to other students' GPAs, both within and across institutions. The importance of the GPA as a metric cannot be overstated because of the many ways in which it is used and the various stakeholders who rely on the information it provides. GPA is used by universities¹² to assess progress and achievement levels of students, by prospective employers for interview screening and hiring decisions, by donors and various agencies for awarding scholarships and other funding, by governmental and private lenders for determining financial aid eligibility, by graduate schools for admission decisions, and by academic researchers who often use GPA as a proxy for student ability or achievement.

Widespread use of GPAs in these ways suggest that users believe a) that GPAs provide a valid measure of student performance and b) that GPAs are comparable across students and

¹² The institutions examined in this research include both colleges and universities and these terms are used interchangeably in this manuscript.

across institutions. For this to be true, the GPA metric must include all relevant information about a student's performance and must be computed in a manner that is known and consistently applied to students and institutions. Omission of relevant information about student performance, or significant variability in the methods used to compute GPAs across students or institutions, would reduce or potentially even eliminate the usefulness of the GPA.

This paper examines institutional policies governing the computation of GPAs used by AACSB¹³ accredited four-year colleges and universities in the United States and the possibility that these policies create institutionalized GPA inflation. Significant differences in these policies across institutions were found, and these differences alone call into question the use of the GPA statistic as a factor in decision making. While our sample includes institutions with accredited business programs, the policies we examine are university-wide policies which apply to all fields of study. For this reason, our findings apply to institutions as a whole, not merely business schools and should be of interest to anyone who uses GPAs in their decision-making process including students, employers, academic institutions, graduate school admissions committees, governmental providers of financial aid, scholarship donors/administrators and academic researchers.

PRIOR RESEARCH

Prior research in this area is focused on two separate, but related, phenomenon – “grade inflation” and “institutional GPA inflation”. Grade inflation occurs when faculty assign students higher grades over time without a corresponding increase in student knowledge. According to Stone (1995), grade inflation is “an increase in reported grades unwarranted by student achievement.” In other words, current students are assigned higher grades than previous students for equivalent levels of achievement. Grade inflation (caused by faculty assigning higher grades in individual courses) will translate into an increase in grade point averages because individual course grades are the primary input into the GPA calculation. In contrast, institutional GPA inflation refers to an increase in GPA which is not due to increases in individual course grades (grade inflation), but rather to the institution's selection of policies which govern the calculation of the GPA. These institutional policies can create institutional GPA inflation and are the focus of this research.

Grade Inflation Research

The issue of grade inflation has been studied extensively by researchers for many years. A significant body of research exists which establishes the existence of grade inflation over time and explores both the possible reasons or causes of grade inflation and its likely effects. Juola (1976) was among the first to report evidence of grade inflation. They reported a GPA increase of .404 points between 1965 and 1973, based on a large sample of institutions. Kuh and Hu (1999) conducted a large-scale examination and found that “full-time college students in the 1990s reported higher grades than their counterparts from the 1980s with similar background characteristics who put forth comparable academic efforts”. Rojstaczer and Healy (2012) examined the grades awarded to students over a seventy-year period. Examining four-year

¹³ Association to Advance Collegiate Schools of Business

universities, they found that students were awarded a grade of “A” 43% of the time which represented a 28% increase over the number awarded in 1960. Meanwhile, “D” and “F” grades represented only 10% of the grades awarded. In addition, they found that private universities award more grades of “A” and “B” than public universities. Kostal, et.al. (2016) also confirmed the existence of average GPA increases at the student level from the mid-1990’s to the mid-2000’s. They found that “two students with the same academic credentials, same demographic characteristics, and similar course-taking patterns would be expected to obtain cumulative GPAs differing by .079 grade points simply due to having entered college at different times.”

In addition to identifying the existence of grade inflation, prior research has also addressed the possible causes or sources. Many suggest that grade inflation is the result of faculty reaction to various pressures. These pressures come from students, other faculty, society, and the institution itself. Chowdhury (2018) indicated that faculty may use grade inflation to obtain more job security, obtain financial incentives or merely to save time that would otherwise be spent justifying to students why they received lower grades. Brian (1998) suggested that as the focus of a university shifts to more research-oriented activities, professors may find that they need to shift their focus away from teaching activities to satisfy administration’s demand for research, thus taking time away from working with students, especially unhappy ones. By assigning higher grades, they pacify unhappy students and thus reduce the time spent with them. Gruhlke (2018), on the other hand, suggested that faculty face increased pressure to assist students because these students must earn higher grades to obtain better employment and higher salaries. Some faculty may feel that they are not only responsible for educating students, but they are also responsible for the impact that the grades they assign have on the future of those students. These faculty may view grade inflation as a way to ensure that a student’s future is protected. Higher grades may be seen as a way to increase students’ competitive advantage in the job market (Johnson, 2003), especially if they are competing against students from grade-inflated institutions (Butcher, et. al., 2014). There may be a tendency toward more lenient grading policies in order to increase the attractiveness of an institution’s students to prospective employers (Chan et al., 2007). Leo (1993) suggested that using grade inflation might be a way to reduce any negative publicity associated with rising tuition. In other words, higher grades may appease students and their families who want to see a positive return on their investment. Many have suggested that faculty increase grades in response to student evaluations of their teaching, which is widely used in promotion and pay decisions (Eiszler (2002); Weller (1986); Ellis, et.al., 2003; Moore & Trahan, (1998).

Regardless of the cause, most research tends to reach the same conclusion that grade inflation is harmful to multiple parties. Chan et al. (2002) and Schwager (2012) find that when grade inflation is present, poorer students benefit while better students bear the costs of these policies as the value of higher grades becomes diluted. Better students have to share the same grades with less capable or less hardworking students (Finefter-Rosebluh and Levinson, 2015) and “better A and B students may be discouraged from achieving their full potential” (Lackey and Lackey, 2006). Grade inflation may result in students being less likely to choose low-inflation majors like math and science (Kuh and Hu, 1999; Sabot and Wakeman-Linn, 1991) and may also negatively affect study habits as well (Babcock, 2010). Finally, grade inflation may damage the reputation of the institution (Goldman, 1985; Edwards, 2000; Hassel and Lourey, 2005; Moore and Trahan, 1998) as well as the overall value of a college degree (Hassel and Lourey, 2005).

Institutional GPA Inflation Research

One specific component of grade inflation that has received much less attention by researchers is the institutional component. This is the portion of GPA inflation that is caused by the policies of the institution itself. We use the term institutional GPA inflation to refer to an increase in student GPAs which is due, not to faculty or student actions, but rather, is a result of policies chosen by the educational institution. Each educational institution creates policies which define how its GPA will be computed. These policies provide rules regarding how the GPA calculation is to be performed and which course grades should be included in the calculation. For example, is the calculation a weighted average? If so, what is the weighting scheme? Are transfer grades included? What about pass/fail grades? Are grades from repeated courses included? The institution's choice of these policies will have a direct impact on reported GPAs and have the potential to be inflationary.

Among the first to address these institutional policies, Collins and Nickel (1974), surveyed two- and four-year institutions and reported that over 90% of all responding institutions allowed courses where a grade of F was assigned to be repeated, with over 50% having no limit on the number of times. While they did not address the impact of these policies on GPAs directly, they do suggest that "the transcript is beginning to be considered more as a record of accomplishment than an historical journal of successes and failures". Birnbaum (1977) was the first to formally distinguish between inflation of grade point averages and inflation of the grades themselves. According to Birnbaum, GPAs are subject not only to the same factors affecting individual course grades, but also to a wide range of institutional policies relating to the calculation of the GPA such as permitting a student to drop a course or repeat a course or increased use of pass/fail policies, etc. Birnbaum suggests that these institutional policies may be one explanation for an increase in GPA which does not include lowering of standards. The importance of the university as a potential source of GPA inflation was also identified by Jewell et al. (2011). They examined two decades of data and found that the two primary determinants of observed GPA inflation at one university were individual instructor factors and overall university level factors. University level factors include such things as national or regional trends in competition for students, public funding formulas and other policies which may encourage universities to add students. They suggest that these university level factors are significant enough that it may often be in the best interest of the university to actually encourage GPA inflation.

Research on the specific association between university policies and grade inflation is very limited. Marx and Meeler (2013) examined eight public institutions in one state and found that some institutional policies allow students to selectively inflate their GPA. They suggest that university policies which allow students to repeat courses, withdraw from courses during the semester and take courses with Satisfactory/Unsatisfactory designations lead to institutional grade inflation. In addition, they suggest that the student's ability to manipulate what is included in their GPA, combined with the wide variety of policies employed by universities regarding how and which grades are included, reduces the informational value of student GPAs, making it very difficult to evaluate students' performance. Jiang, et. al (2021) examined grade forgiveness policies and the effects of changes in those policies on student outcomes at one university. They found that with a grade forgiveness policy, students were significantly more likely to repeat a course and slightly more likely to take STEM classes. They found little evidence that the

forgiveness policies led to a decline in effort among first attempts at a course and no effect was found on graduation rates (although time to graduation was lengthened).

We continue this line of research by also examining institutional policies and their potential to inflate GPAs and we extend and contribute to the literature in two significant ways. First, we are using a large national sample. Prior research used relatively small sample sizes (Jewell, et.al and Jiang, et.al. studied only one university and Marx & Meeler examined eight universities in a single state). In contrast, our sample consists of over 500 four-year institutions. Sample institutions range from very small to very large enrollment and are located in every state in the United States. The sample includes both private and public institutions and includes schools from all Carnegie classifications and rankings. This unique and robust sample provides a comprehensive and in-depth look at the institutional GPA-related policies which are actually being used. This allowed us to identify some nuances in these policies which have not been identified in prior research and to provide evidence regarding how widespread the use of inflationary policies is. Second, our research dives deeper to identify which type of institutions might be choosing to use these policies. We do this by analyzing the association between institutional policy choice and institutional demographic characteristics. Specifically, we examine how the size, ranking, mission or public/private status of institutions are associated with the institution's choice of GPA-related policies. This association, in turn, provides illumination on possible motivations for institutional grade inflation.

METHODS

For this study, our sample began with all AACSB accredited schools in the United States¹⁴. The AACSB is the longest-serving global accrediting body for schools of business and represents the most prestigious form of accreditation a business school can achieve. AACSB accredited universities were chosen for this study for several reasons. First, this accreditation is widely accepted as an indicator of quality. While AACSB provides accreditation for schools of business, achievement and maintenance of this accreditation requires the support and resources of the larger university. Thus, this accreditation is not only an indicator of a quality business school but also signals a university administration that values and prioritizes quality and it is reasonable to assume this commitment to quality would extend to its other programs as well. Second, AACSB accreditation provides a natural screen for our primary sample criteria which included 4-year, undergraduate, and not-for-profit institutions in the United States. Finally, using AACSB accredited schools ensures that all institutions in our sample include at least one field of study in which the GPA is of significant importance. Many schools of business require a minimum GPA before undergraduate students can declare a business major and require maintenance of a minimum GPA to remain in the school of business. Most graduate programs in business use an applicant's GPA as an entry requirement. Scholarships awarded to both undergraduate and graduate students in business schools are often based, in large part, on GPA. In addition, employers of business graduates tend to rely heavily on GPAs, first as a screening device for interviews and subsequently for employment decisions.

It is important to note that there are certainly other fields of study which also rely heavily on the GPA, and that while having an accredited business school affected our sample selection,

¹⁴ As of 2019.

the actual policies being studied in this research are university-wide policies and are not unique to business education. Thus, our results are widely generalizable to the entire university.

Data was hand-collected via an extensive manual search of the academic catalog and website for each of the 511 AACSB accredited institutions. Policies pertaining to the computation of undergraduate GPAs were identified for each institution along with demographic information. Data was unavailable for 30 of the institutions which resulted in a final sample size of 481 institutions. The final sample is robust and includes both public and private institutions of all sizes and types. Sample schools are located in all 50 states and the District of Columbia. A summary of the demographic characteristics of the sample is provided in Table 1.

Table 1
Sample Demographics

Classifications	Number of Institutions	Percent of Sample
Enrollment:		
Small	216	44.9
Medium	127	26.4
Large	71	14.8
Extra Large	<u>67</u>	<u>13.9</u>
	481	100.0
Funding Source:		
Private	147	30.6
Public	<u>334</u>	<u>69.4</u>
	481	100.0
Mission: (Carnegie Classification)		
Bachelor/Master	210	43.6
Research 1	113	23.5
Research 2	101	21.0
Research 3	<u>57</u>	<u>11.9</u>
	481	100.0
US News Rankings:		
Top 100	83	17.3
101-200	82	17.0
201-300	47	9.8
301-400	60	12.5
Not Ranked	<u>209</u>	<u>43.4</u>
	481	100.0

Institutional GPA Policies

Extensive examination of the GPA-related policies of the schools in our sample revealed both similarities and differences across institutions. With respect to the similarities, all of the institutions we examined require GPAs to be computed using a weighted-average mathematical computation, with higher grades receiving higher weights. While the weighting systems used varied slightly (particularly for schools that use +/- grading system), the method of computation was highly consistent across schools. In addition to the mathematical computation, institutions in our sample consistently excluded withdrawals and dropped courses from the GPA. Also, we found significant consistency with regard to course grades which were transferred in from other schools, with 91.8% of all schools in our sample excluding transfer grades from the GPA calculation. All of these similarities in GPA-related policies enhance the usefulness and comparability of the GPA both within and across institutions.

Unfortunately, not all GPA-related policies exhibit this level of consistency. In particular, a high degree of variability was found in policies relating to repeated courses. We found that there are actually two such policies. One type, referred to in this paper as the Repeat Policy (RP), addresses whether the institution permits students to repeat courses and, if so, how many times. The second type of policy, referred to in this paper as the Grade Inclusion Policy (GIP), identifies which of the multiple grades, resulting from repeated courses, are included in the GPA calculation. Both types of policies have significant potential to affect GPAs. First the RP will affect the number of course attempts, and therefore the number of grades, for a given course. Then the GIP is applied to determine which of these multiple grades will be included in the GPA computation. Thus, we found that while most schools are computing GPAs using similar weighted-average computations, the inputs into those computations are significantly different across institutions, because of differences in the institution's choice of repeated course policies.

Repeat Policies

Repeat Policies (RP) are the institutional policies which address whether a course can be repeated and, if so, defines any limitations on the number of times it can be repeated. Thus, these policies have a direct effect on the quantity of course attempts. Based on our study of these policies, we identified two types of RP. The first defines the number of course repeats allowed by a student during their entire tenure or career at the institution (Career Repeat Policy). For example, a student may be permitted to have up to 5 repeats in their career at the university. The second type of limitation on repeated courses is found at the course level. This limits the number of times a student may repeat a specific course (Course Repeat Policy).

As can be seen in Table 2, Seventy percent of all institutions in our sample allowed students to repeat courses an unlimited number of times in their university career, while 30% imposed a limit of some sort. With respect to the course repeat policy, our sample was almost evenly divided with 49% of the sample institutions allowing an unlimited number of repeats per course, while 51% limited the number of times a specific course could be repeated. Both the career and course repeat policies can affect the number of course attempts available to a student and in so doing, affect the number of grades a student has earned for a particular course.

Table 2
Repeat Policies

Repeat Policies	Career Repeat Policy	Course Repeat Policy
Unlimited Repeats	70% (336)	49% (238)
Limited Repeats	30% (145)	51% (243)

It is possible that schools may use one of these types of limitations to balance out or mitigate the effects of the other. For example, a university may allow an unlimited number of repeats in a student's career but limit each course to two repeats. Or an institution may allow students to repeat a specific course an unlimited number of times subject to an overall limit of five repeats in their career at the institution. To investigate this, we performed a test of association between the Career Repeat and Course Repeat variables. A chi-square test was conducted due to the categorical nature of these variables. Results are presented in Table 3.

Table 3
Association of Career and Course Repeat Policies

Career Repeats	Repeats Per Course		
	Unlimited	Limited	Total
Unlimited	196 (58.33%) *	140 (41.67%)	336 (100%)
Limited	42 (28.97%)	103 (71.03%)*	145 (100%)

Chi-Square 34.947 (p-value .001)

Asterisks indicate a proportion that is significantly higher than the other percentage on that row (z-test).

According to Table 3, the chi-square statistic is significant which indicates that an association does exist between a university's Career Repeat and Course Repeat policies. By examining the first row of Table 3, one can see that among those schools that allow unlimited repeats in a student's academic career, the percentage that also allows unlimited repeats per course (58.33%) is higher than the percentage that limits the number of repeats per course (41.67%). The difference in these percentages was found to be significant, based on a test of column proportions (z-test) for categorical variables. Likewise, for schools which limit the number of career repeats (second row of Table 3), a significantly higher percentage also limit course repeats (71.03%), as compared to the percentage using unlimited course repeat policies (28.97%). In other words, when a school chooses an unlimited (limited) policy for their career repeat policy, they are more likely to also choose an unlimited (limited) policy for their course repeat policy. These results suggest most schools apply a consistent philosophy regarding course repeats and do not use one type of policy to mitigate the effects of the other.

Grade Inclusion Policies

Our examination of institutional policies also revealed a second type of repeated course policy, which we refer to in this paper as the grade inclusion policy (GIP). This policy specifies which of the multiple grades resulting from repeated courses will be included in the GPA. The institutions in our sample varied widely in these policies. After examining each policy, we categorized them into one of four policy types.

The first type of grade inclusion policy (ALL) requires that all grades earned on every attempt of a course be included in the GPA calculation. This policy results in a true average of student performance by including all relevant information about a student's performance, both successful and unsuccessful. As a result, ALL is a neutral policy which neither inflates nor deflates the GPA. The second type of grade inclusion policy (HIGHEST) includes only the highest grade earned for a repeated course in the GPA. In this case, the number of times a student attempts a course does not affect their GPA. If a student takes a course three times, receiving an F, B and C, only the B will be included in their GPA. The GPA is computed as if the other two attempts never took place. For any students who repeat courses, this policy has the potential to inflate the GPA. The more repeats a school allows (determined by the RP), the more inflationary the effect. The third type of policy, RECENT, includes only the most recent grade earned in the GPA and ignores all others. While in theory this policy could be deflationary or inflationary, in practice it is highly likely to be inflationary. Because repeating a course is costly for students in terms of both money and time, students will rarely repeat a course once a satisfactory grade is earned. As a result, RECENT will most often exclude lower grades, making it, on balance, an inflationary policy. In fact, it is likely that in most situations, RECENT and HIGHEST policies will result in the same effect on the GPA. Some refer to these as grade forgiveness policies (Jiang, et.al., 2021). Finally, we found that some institutions use a grade inclusion policy that is some combination of the other types which we refer to as HYBRID. For example, a school might use HIGHEST for the first two attempts, but ALL if more than two attempts are made. Or RECENT for the first five course repeats at the university but ALL for all others. These types of policies are also potentially inflationary, but less so than HIGHEST or RECENT. Table 4 summarizes our findings regarding institutional use of grade inclusion policies.

Table 4
Grade Inclusion Policies

Policy Type	Percentage	Effect on GPA
ALL	14.69%	Neutral
HIGHEST	13.17%	Inflationary
RECENT	47.73%	Inflationary
HYBRID	24.41%	Less Inflationary

When examining Table 4, it is notable that only 14.69% of all schools in our sample use ALL, the only policy that incorporates all relevant information regarding student performance and therefore does not have the potential to inflate GPAs. All remaining schools use policies

which exclude relevant data (lower grades) from GPAs and result in an inflated measure when courses are repeated. In fact, the more times a course is repeated, the greater the inflationary effect on a GPA.

Comparisons of GPAs to predetermined standards or to other student GPAs, which are the primary ways in which a GPA is used, becomes problematic in the presence of GPA inflation. GPA comparisons can only be valid if all schools use the same grade inclusion policy and if all students have the same number of repeated courses. As seen in Table 4, schools vary widely in the manner in which they incorporate grades from repeated courses into the GPA and, of course, students do not all repeat courses the same number of times. The following examples show 1) the inflationary effects of these policies and 2) how grade inclusion policies can reduce or even eliminate the informational value of the GPA (and hence its usefulness).

Example 1: Within a University

Consider two students at the same university. Each student takes the same three classes. Student #1 earned Bs in all three classes and did not repeat any of them. Using a standard weighted average computation, student #1's GPA would be 3.0. Student #2 failed all 3 classes and repeated each of them, earning Bs in each the second time. If this university uses the ALL policy, student #2's GPA would be 1.50 (3 Fs and 3 Bs). Comparison of these GPAs clearly shows that student #1 has performed at a higher level than student #2. However, if the university used HIGHEST or RECENT policies, the Fs will be excluded and only the three Bs will be included in student #2's GPA. Thus, student #2's GPA would also be 3.0. Under these circumstances, comparing GPAs will lead the user to conclude that these students performed the same, which is clearly a faulty conclusion.

Example 2: Across Universities

Now consider student #3 and student #4 who are attending different but very similar universities. Both students have the same major and take the same three classes of equal difficulty. Both students earn Fs on their first attempt and repeat each course, earning Bs the second time. The two students are performing at the same level. Assume student #3's university uses ALL and student #4's university uses RECENT. Student #3's GPA will be 1.5 while student #4's GPA will be 3.0. The GPA fails to accurately reflect the relative performance of these two students.

Based on the results in Tables 2 and 4, we can conclude that institutional policies which reduce the informational value of GPAs are being widely used. These policies create GPA inflation for students who repeat courses and make comparisons (to a predetermined standard or to another GPA) problematic.

Institutional Characteristics

Having established the existence, widespread use and inflationary effect of these institutional grade inclusion policies, we turn our attention to the question of which institutions are using these policies. If the characteristics of institutions that are more likely to use inflationary policies can be identified, this may assist users of GPAs in making their own informal/holistic adjustments, which, in turn, may help to mitigate the harmful effects of these

policies. For example, if all (or most) private schools used ALL and allowed unlimited repeats, a GPA user might feel comfortable comparing GPAs across private schools. Or, if RECENT were used primarily by small schools but not by large schools, users could holistically adjust GPAs from small schools before comparing to GPAs from large ones. It should be noted, however, that this type of adjustment would not solve the problem of comparing student GPAs within the same university. Understanding what types of institutions choose to use inflationary policies may also provide important insight into their motivations.

To investigate what types of universities are more likely to use inflationary policies, we examined the association between grade inclusion policies and several demographic characteristics of the institutions in our sample. The demographic characteristics we examined were size (enrollment), funding source (public vs. private), mission (Carnegie classification) and rankings (USNews).

For purposes of these analyses, due to their similar inflationary effect on GPA, HIGHEST and RECENT policies were combined into one category (inflationary). A test for association between the grade inclusion policies and each demographic characteristic was performed. Due to the categorical nature of the variables, a Chi-Square test was used to test for this association. Results are reported in Tables 5-8.

Size

The first institutional characteristic we examined was size. All schools in the sample were placed into one of four distinct categories, based on enrollment. The size categories are as follows: Small (10,000 or fewer students), Medium (between 10,001 and 20,000 students), Large (between 20,001 and 30,000 students), and Extra Large (greater than 30,000 students). Table 5 presents, for each size category, the percentage of schools using each type of grade inclusion policy.

Table 5

Association of Grade Inclusion Policies and School Size

Grade Inclusion Policy	Small	Medium	Large	XL
	<10K	10K>20K	20K>30K	>30K
Inflationary (HIGHEST & RECENT)	65.00%*	66.90%*	57.70%	39.30%
Less Inflationary (HYBRID)	17.90%	20.00%	33.80%*	37.70%*
Non-Inflationary (ALL)	17.00%	13.10%	8.50%	23.00%

Chi Square: 23.585 (p-value: .001)

**Asterisks indicate proportion is significantly higher than the shaded proportion in the same row. (at .001 level)*

The first thing to notice in Table 5 is that inflationary policies are used more than any other type of grade inclusion policy by institutions of all sizes. The chi-square statistic was significant, which allows us to conclude that an association between the type of grade inclusion policy chosen by an institution and its size does exist. To investigate this association further, a

test of column proportions (z-test) was completed. In Table 5, for each type of grade inclusion policy (each row), asterisks (*) are used to indicate the proportions that are significantly higher than the proportion shaded in gray on the same row. As Table 5 indicates, the percentage of small and medium sized institutions using inflationary policies is significantly higher than the percentage of the largest institutions (XL) using inflationary policies. The less inflationary HYBRID policies are used significantly more by extra-large and large institutions than by small institutions. No significant difference was found in the usage of the neutral (ALL) policy across all sizes of institutions.

One possible interpretation of these findings is that institutions that are smaller in size are facing more pressures to retain students and thus allow a more forgiving repeat policy which tends to inflate grades. Larger institutions have a greater population of students and greater resources and thus may not face these pressures to the same extent. The results could also be indicative of a more nurturing environment in smaller institutions who may use more liberal repeat policies to help students achieve their goals.

Funding Source – Public vs Private Institutions

Next, we examined the association between grade inclusion policies and the institution's source of funding (private vs. public institutions). Table 6 reports, for each type of institution (private or public), the percentage of schools choosing each type of grade inclusion policy. Inflationary policies are found to be used more than any other type of policy, by both private and public institutions.

Table 6

Association of Grade Inclusion Policy and Funding Source

Grade Inclusion Policy	Private	Public
Inflationary (HIGHEST & RECENT)	55.90%	63.70%
Less Inflationary (HYBRID)	17.10%	26.10%*
Non-inflationary (ALL)	27.00%*	10.20%
<i>Chi Square: 23.632 (p-value: .000)</i>		

*Asterisks indicate proportion is significantly higher than the shaded proportion in the same row. (at .001 level)

A Chi-square test was completed on these categorical variables and was found to be significant which indicates that an association does exist between the funding source of an institution (public or private) and its choice of grade inclusion policy. To examine this association further, a test of column proportions (z-test) was completed. As Table 6 indicates, there is no significant difference in the percentage of private schools using inflationary policies and the percentage of public schools using them. However, a statistically higher percentage of public institutions are using HYBRID policies while a significantly higher percentage of private institutions are using the neutral (ALL) policies. Thus, it appears that the association found between funding source and policy choice is not being driven by the inflationary policies, but rather by the other types of policies.

The finding that private institutions use significantly more noninflationary policies could be an indication that they are more concerned with their reputation and believe that a strong reputation is what will attract more students. However, this theory is inconsistent with the fact that private institutions are using mostly inflationary policies. It could also be an indication that they face fewer competitive or funding pressures.

Mission

Another institutional characteristic that could affect the choice of grade inclusion policy is the mission or purpose of the institution. The Carnegie classification of each institution was used as a proxy for mission. We used the basic classification which classifies schools based on their emphasis on research. R1 represents very high research activity, R2 is high research activity, and R3 is moderate research activity with all three awarding at least 20 doctoral degrees annually. The M/B category is used for institutions that offer less than 20 doctoral degrees annually.

Results of this analysis are shown in Table 7. Again, we see the dominance of the inflationary policies given that they are the most common type of grade inclusion policy used regardless of Carnegie classification.

Table 7
Association of Grade Inclusion Policy and Carnegie Classification

Grade Inclusion Policy	R1	R2	R3	M/B
Inflationary (HIGHEST & RECENT)	40.70%	72.80%*	66.70%*	64.30%*
Less Inflationary (HYBRID)	32.40%	17.50%	18.30%	23.00%
Non-inflationary (ALL)	26.90%*	9.70%	15.00%	12.70%
<i>Chi Square: 29.246 (p-value: .000)</i>				

*Asterisks indicate proportion is significantly higher than the shaded proportion in the same row. (at .001 level)

Due to the significant chi-square test, we can conclude that there is a statistical association between the Carnegie classification of an institution and its choice of grade inclusion policy. Looking deeper, the most striking result in Table 7 is the extent to which the R1 institutions stand apart from the others. While R1 institutions use inflationary policies more than they use other policies, they use them significantly less than the institutions in the other Carnegie classifications. In addition, R1 institutions use the noninflationary policy (ALL) significantly more than R2 and M/B institutions. No statistical difference was found across classifications for the HYBRID policy.

There are many possible reasons R1 schools are using inflationary policies significantly less than the other schools. Perhaps the research-focused mission of R1 schools results in less pressure to retain/attract undergraduate students as they are generally more focused on graduate

education. Many R1 schools have higher admission standards as well which would mean their students may need fewer course repeats. Finally, these schools generally have more name recognition, alumni support and sources of revenue which may reduce the need for inflationary policies.

Ranking

Finally, we considered how an institution's grade inclusion policy might be associated with its ranking. The sample was divided into five groups based on their ranking by USNews (Best National Colleges). These rankings are based on a wide variety of factors such as retention and graduation rates, expert opinions, social mobility, student excellence, etc. We separated our institutions into groups of 100, based on the rankings, for comparability purposes. Results are provided in Table 8. Once again, the chi-square statistic is significant, indicating the existence of an association between an institution's ranking and its choice of grade inclusion policy. Table 8 reveals that the top 100 ranked institutions seem to be significantly different from the others. Institutions ranked in the top 100 use inflationary policies significantly less than institutions with lower rankings (3rd 100, 4th 100 and not ranked) and use the noninflationary policy (ALL) significantly more than all other rankings. There was no statistical difference found across classifications for HYBRID policies. The results in Table 8 in many ways mirror the results in Table 7 (Carnegie classification). This is most likely due the fact that many of the R1 institutions are also among the top 100 ranked schools.

Table 8

Association between Grade Inclusion Policies and Institutional Ranking

Grade Inclusion Policy	1st 100	2nd 100	3 rd 100	4th 100	Not Ranked
Inflationary (ALL & RECENT)	36.10%	57.50%	77.60%*	80.00%*	63.20%*
Less Inflationary (HYBRID)	22.90%	30.00%	22.40%	16.70%	23.10%
Non-inflationary (ALL)	41.00%*	12.50%	0.00%	3.30%	13.70%
<i>Chi Square: 66.118 (p-value: .000)</i>					

*Asterisks indicate proportion is significantly higher than the shaded proportion in the same row (at .001 level).

Discussion

Our analysis of demographic characteristics revealed that inflationary policies were used more than any other type of grade inclusion policy by institutions of all sizes, by both public and private institutions, and by institutions of all Carnegie classifications. The only type of institutions in our analysis that did not use inflationary policies more than any other type of policy were institutions who are ranked in the top 100. Given the fact that inflationary policies reduce the informational value of the GPA, why do so many schools choose to use them? While it was not the purpose of this study to answer this question, we believe our results suggest two

possible theories. First, institutional decisions regarding these policies may be driven by altruism and a sincere desire to help students succeed. These institutions may choose to allow repeats and omit failing grades from GPAs in an effort to give students a second chance. The argument is that everyone makes mistakes, no one is perfect, and that this helps to level the playing field for disadvantaged students, etc. Under this theory, one would expect schools with more disadvantaged students, more first-generation students or with lower admission standards (students with greater need for assistance) to use more inflationary policies.

A competing theory is the more cynical view that institutions choose these policies based on their competition for scarce resources and revenue. These policies result in the school receiving additional revenue for the repeated courses and, more importantly, prevents the loss of a future revenue stream which would occur if the student was forced out of the institution. In addition, such lenient and inflationary policies may attract more students, and thus revenue, in the future. Higher GPAs may enhance the reputation of the school, which may also result in an increase in future support and revenue. Using this theory, one would expect schools with greater budgetary stresses, fewer sources of revenue, students of lesser ability and less reputation to select more inflationary policies. Again, this describes smaller (less name recognition), lower ranked, public institutions with less of a research focus.

Most likely, both of these theories are working together in some manner. Our results could be seen as consistent with both, and future research is needed to better understand the complex motivations of these institutions. The demographic characteristics we examined could be seen as imperfect proxies for budgetary pressures and for student abilities. Clearly, more information is needed to determine what forces are behind these policies. Further studies could focus on how the users of GPAs perceive the usefulness of this measure. It would be interesting, for example, to determine if employers understand how forgiving university policies relate to course and career repeats. Or if they understand how diverse the policies are between universities. Another potential area for future exploration is to determine if international universities use the same types of policies and the extent to which they are used.

SUMMARY

This paper examined university policies regarding the computation of undergraduate GPAs and how those policies affect the usefulness or informational value of the GPA metric. Using a robust sample including institutions of all types, sizes and geographical locations, we found that there are significant differences across universities in the policies regarding repeated courses and how they affect the computation of the GPA. These differences are significant enough to call into question the usefulness of the GPA in sound decision making.

A significant majority of AACSB accredited schools (69%) allow students an unlimited number of course repeats in their academic careers. Schools which allow students an unlimited (limited) number of course repeats in their academic career tend to also allow unlimited (limited) repeats per course. Both the Repeat Policy (whether and to what extent the institution permits students to repeat courses) and the Grade Inclusion Policy (which grades from repeated courses are included in the GPA calculation), were found to differ widely across institutions. The large amount of variation in these policies makes it very difficult for users of the GPA metric to fully understand what information the GPA is (or is not) providing. In addition, this variation in policies results in GPAs which are not comparable, to either a standard or to other GPAs, within or across institutions. This lack of comparability reduces the informational value of the GPA.

University policies were categorized according to their potential effect on the GPA metric and were identified as either inflationary, hybrid or neutral policies. Inflationary policies allow grades for unsatisfactory attempts at a course to be omitted from the GPA calculation, resulting in a GPA which reflects only a student's successes. A neutral policy is one which includes grades for all attempts of a course, resulting in a GPA that reflects both a student's successes and failures. A hybrid policy contains elements of both the inflationary and neutral policies.

We found that inflationary policies were by far the most common and were used by 61.2% of all AACSB accredited institutions, while only 15% used a neutral GPA policy. Additional analysis of demographic factors revealed that inflationary policies remain the most common type of policy used for all sizes of institutions, across all rankings, across all Carnegie designations and for both public and private schools.

While inflationary policies are the leading type of policy for all types of institutions, we also found that inflationary policies are least likely to be used by very large, private, R1, top-100 ranked universities and more likely to be used by smaller, non-R1, lower ranked universities. This is consistent with the theory that these policies may be used to mitigate budgetary and competitive pressures. While it was not the purpose of this research, these findings may provide some insight into the institutional motivation for these policies.

Our findings suggest that GPA inflation is caused, not only by faculty giving higher grades for less achievement, but also by the policies selected by administration. Course repeat policies often create institutional GPA inflation. This institutional inflation is applied inconsistently across students because it occurs only when courses are repeated and students who do not repeat courses do not benefit from this GPA inflation. The wide variation found in these policies across institutions, inflationary or not, result in GPAs which are not comparable across students or universities. Because the GPA is not accurately capturing student ability or achievement and because it lacks comparability, it should not be considered a quality metric for use in decision making. Unfortunately, it is likely that most GPA users are unaware of these issues. Users need to be educated about the specific GPAs they are using and how they were computed. Anyone using GPAs in their decision-making process including students, employers, academic institutions, graduate school admissions committees, government agencies providing financial aid, scholarship donors/administrators and academic researchers should proceed with caution and should educate themselves about the methodology used to compute the GPAs upon which they are relying.

Institutional grade inflation is an issue that deserves additional focus. Areas of future research include further examination of the motivation(s) of universities to use inflationary grade policies, the manner in which these inflationary policies affect various student populations, and the level of awareness of institutional GPA inflation that exists among GPA users. Finally, this research can be extended to international institutions to determine if those institutions face similar issues with institutional GPA inflation.

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