THE PLUSES AND MINUSES OF POLICY ANALYSIS: PREDICTING THE IMPACT OF A NEW GRADING POLICY

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Presented at NEAIR 33rd Annual Conference
Philadelphia, PA November 2006

This paper was presented to demonstrate a methodological approach to be used when predicting the impact of a new policy. Some results contained within this paper have been modified to mask individuals or units who may be impacted; this is intended to allow the presenters to demonstrate the process while protecting the confidentiality of units within the University.

Plus/Minus Grading Impact Analysis
Executive Summary

The purpose of this study was to better understand the impact of the new weighted plus/minus grading calculation on undergraduate graduation rates and course availability. Grades from the fall 2002 cohort of incoming undergraduate students were used to determine the impact on probation and dismissal with the accompanying impact on graduation rates. Additionally, all undergraduate courses assigning the C- grade during the 2003-04 and 2004-05 Academic Years were examined to understand course availability.

Findings

Impact on Graduation Rates and Cumulative GPAs:

- Although semester GPA changes appear to have a relatively balanced impact (similar numbers of students positively and negatively impacted) ***over the long term, most students' cumulative GPAs are affected negatively***. After seven semesters, only the band of students with a GPA of 3.9 or above had a majority of the students who would be positively impacted by the policy change. The vast majority of students at all other GPA ranges would be hurt by the policy change.
- Disciplinary actions would increase under the new policy. These findings are consistent with another analysis conducted by the Office of the Registrar, November 2003. The ***impact on disciplinary actions, particularly dismissals, also appears to be amplified when examined over time*** rather than for a single semester. Raising a cumulative GPA appears to be more difficult under the new plus/minus weighting system.
- The number of dismissals more than doubled each semester after the first year, impacting the number of students who could persist to graduation. ***This could lower the graduation rate by approximately 2 percentage points*** if all of these dismissed students would have continued through graduation.
- The potential impact for dismissal under the new grading system is ***more pronounced for minority students*** (particularly because the base is small). African American dismissals could decrease the graduation rate by as many as 7 percentage points. Hispanic rates could decrease by 5 percentage points.
- Eliminating the C-, D+, and D- grades could reduce the impact on African American graduation rates to a 5 point decline. The decline in the overall graduation rate would not, however be impacted, as these grades make up a relatively small portion of the grade distribution.

Impact on Course Demand and Its Financial Implications:

- Course Demand may change dependent on the acceptance of minus grades for fulfilling CORE and major requirements. If a minus grade is not deemed acceptable, this will increase course repeats, putting additional stress on course availability.
- ***As many as 40 additional CORE sections per semester may be required to accommodate the increased demand.*** Additional course section units (as many as 40 more) may be required to accommodate major requirements or other prerequisites. Current waitlists may make this more pronounced.
- If this were additional demand (versus a shift from demand for other courses) this could cost the University upwards of $320,000 per fiscal year at $4,000 per section.

- ❖ Many CORE courses are held in large lecture halls. Space availability and utilization constraints may impact the University's ability to offer additional course sections.

Limitations

This study ***likely represents a worst case scenario***.

- All analyses assume that student behavior will not change under the new grading weights and that faculty will continue to utilize the plus minus system as they have in the past.
- The calculations on graduation rate impact assume that the additional dismissals would persist to graduation; this may overstate the impact on the graduation rates.
- The replacement of repeat course grades within the first 24 credits has not been incorporated into the semester GPA calculation.
- The calculations on course demand and availability examine the C-, assuming that a C (2.0) is the minimum passing grade. Although this is not a CORE requirement per se, it is often a requirement for pre-requisite courses and courses which simultaneously fulfill both major and CORE requirements.
- The course demand model assumes that all students achieving the C- would attempt to take the same course again; major changes, student motivation and course repeat limits may combine to lower the actual demand.
- Course demand calculations combined partial demand for sections into a total that may overstate the number of sections which would actually be required. They also did not account for potential shifts in demand which may occur due to the potential increased repeat behavior.
- Several additional areas of impact exist that were not considered in this analysis, including the impact on graduate students, implications for Financial Aid recipients, and the impact on students applying to graduate programs.

PLUS/MINUS GRADING IMPACT ANALYSIS

Purpose

On December 12, 2005, the University Senate passed a policy assigning graduated numerical values to plus and minus grades. Prior to this policy, the University of Maryland assigned the same weight to all grades with the same letter, regardless of the plus or minus values assigned by the faculty. The purpose of the current analysis was to identify any potential financial and academic impacts for the University of Maryland and its undergraduate students, given the new plus/minus grade weights.

Introduction

Reports from Eastern Kentucky University (2003), North Carolina State University (1997), Georgia State University (1998), Western Illinois University (2005), and Wake Forest University (1997) were gathered to examine the research on plus/minus grading. A short summary of the general findings is presented here as a context in which to understand this impact analysis.

The positives of plus/minus grading systems identified in these studies were: the incentive to work hard all term; the rewards for students at multiple levels; the ability to better distinguish the quality of graduates; an increase in grading accuracy; and a lack of overall GPA change at the institution for any given semester. The use of plus/minus has been promoted as a potential aid for graduate school admissions and a tool to help committees distinguish between students.

The negatives identified were: the decrease in the number of 4.0 graduates, an increased negative impact on lower GPAs, a negative impact on 3.5 - 4.0 students (typically scholarship students), increased grade appeals, and increased grade changes. One study included results of a survey which indicated that students perceived the potential for loss of scholarship or other merit-based aid as a negative impact.

One area still debated is the effect on grade inflation. Overall, many studies reported no overall institutional GPA change. However, it was noted that these studies did not address the inherent grading processes – which may not always be transparently objective – weakening their ability to conclusively address grade inflation in general.

An area unaddressed by these studies was the cumulative impact on the student body. Many studies utilized a point-in-time analysis of semester grades. Additionally, financial implications beyond administrative costs to the institution were not addressed.

Method

There were two types of analyses conducted to investigate the impact of plus/minus grades – the first focused on the new student cohort of fall 2002, while the second explored the potential impact of C- grades on course demand. The fall 2002 cohort was used to investigate: 1) the change in student cumulative GPAs, and 2) the impact of C- on disciplinary actions of probation and dismissal for new freshmen.

Graduation Rate and Cumulative GPA:

For all students that entered in fall 2002, both new freshman and new transfers, semester GPAs and Cumulative GPAs were re-calculated based on the new weights. Grades from all applicable UM courses (including those taken in the summer or taken prior to fall 2002) were included in the calculation of the GPA. Courses were deemed applicable if they met the following criterion: regular grading method (e.g., not pass/fail or audit), officially enrolled course, completed course (i.e., not withdrawn or incomplete), and designation as applicable within the data warehouse (including applicable toward degree requirements); credit by exam and courses which are not official UM courses were eliminated from the analysis.

Cumulative and semester quality points were computed using the new weights passed by the Senate (A+=4.3, A=4, A-=3.7, B+=3.3, etc.). These quality points were then divided by cumulative and semester attempted credits (based on the credits from included courses) to determine the re-calculated GPA. Additional analyses eliminated the C-, D+ and D- grades by assigning the whole number quality points associated with the letter grade.

Academic actions for each semester were then re-computed. Students with a cumulative GPA of 2.0 or better were deemed in good standing. Those students with a cumulative GPA below 2.0 were then assigned the academic action of either probation or dismissal, depending on their prior and semester academic performance: a) students who were previously in good standing were assigned probation for their first semester with a cumulative GPA below 2.0; b) students with over 60 credits who were previously on probation were assigned to the dismissal category; c) students with under 60 credits who were previously on probation were assigned to dismissal if their semester GPA was below 2.0 or to continuing probation if their semester GPA was 2.0 or better.

Course Demand:

To model course demand, the unit of analysis was the course section. All courses in which any student earned a grade of C- during the 2003-04 and 2004-05 academic years were examined to determine the potential impact of C- grades on course demand. Analyses examined the number of C- grades, the length of the course waitlist (if any), and the type of course (e.g., CORE) to understand the potential impact of course repeats due to C- grades.

To determine the demand generated by students repeating courses in which they earned a C-, potential additional section units were calculated. The number of C- grades earned was divided by the average section size for the course to determine a section unit for that course. Additional analyses included the number of students on the waitlist by adding them to the numerator. These were then summed to calculate the total section units required:

$$\text{Total Section Units}_{\text{C- Only}} = \Sigma \text{ (\# of C- grades / average course section size).}$$
$$\text{Total Section Units}_{\text{C-+ Waitlist}} = \Sigma \text{ ([\# of C- grades + waitlist]/ average course section size)}$$

Assumptions/Methodological Caveats:

This analysis assumes that student behavior will not change under the new grading system. Inherent in the calculations on graduation rate impact is the assumption that the additional dismissals would persist to graduation; this may overstate the impact on the graduation rates. Additionally, the replacement of repeat course grades within the first 24 credits has not been incorporated into the semester GPA calculation (though it has, to the best of our knowledge, been accounted for in the cumulative GPA). The dismissals for spring 2003 were calculated off of a 2.0; the actual dismissals were calculated with a slightly lower GPA during implementation of the new Probation and Dismissal policy.

The calculations on course demand and availability may simplify the complex nature of student course selection and availability. They examine the C-, assuming that a C (2.0) is the minimum passing grade. Although this is not a CORE requirement per se, it is often a requirement for pre-requisite courses and courses which simultaneously fulfill both major and CORE requirements. For example, the Criminal Justice major requires MATH 111 or higher to be completed with a C or better; CJIS majors must also complete supporting sequence courses, frequently including CORE courses such as AMST 201, with a C or better.

These analyses also combined partial demand for sections (e.g., the need for .25 section units) into an overall total. To the extent that small course units (such as .1 section units) would not necessitate an additional section, this may overstate the number of sections which would actually be added. However combining multiple large section units (such as a series of three courses, each requiring .8 section units which may add to 2.4) may understate the need. The model assumes that, on balance, summing course units provides a reasonably accurate estimate of demand. Additionally, currently existing waitlists may be exacerbated by the increased demand.

Results

Impact on Graduation Rates and Cumulative GPA:

1) Changes in Semester GPAs under the new policy (versus the actual semester GPAs under the old policy) appear to evenly impact students, with similar numbers of negative change and positive change. ***In any given semester, there are many students both helped and hurt by the policy change*** when examining their semester GPA. See Appendix, Analysis 1a.

2) ***Over the long term, almost all cumulative GPAs are affected negatively.*** The lower the cumulative GPA, the higher percentage of students affected negatively. After seven semesters, only the students with GPAs of 3.9 or above had a majority of students who had been helped by the policy change. The vast majority of students at all other GPA ranges were hurt by the policy change. See Appendix, Analysis 1a. Eliminating the C-, D+, and D- grades does not appreciably change this phenomenon; see Appendix, Analysis1b.

3) ***Disciplinary actions would likely increase under the new policy***. These findings are consistent with another analysis conducted by the Office of the Registrar, November 2003. See Appendix, Analysis 2.

   Because probation is more sensitive to single semester changes, while dismissal is more sensitive to cumulative academic performance, dismissals are more likely to be adversely impacted by the new policy. Over the long term, raising a cumulative GPA seems to be more difficult under the plus/minus system. The number of dismissals more than doubled each semester. This could lower the graduation rate by 2 percentage points, assuming all of these students would have continued to graduation.

   The impact of the new policy on dismissals is likely to differentially impact minorities. The increased number of African-American dismissals could lower that graduation rate by 7 percentage points; additional Hispanic dismissals could lower the graduation rate by 5 percentage points.

   Eliminating the C-, D+ and D- grades could mitigate the impact on African American and graduation rates but would not likely reduce the impact on the overall graduation rate or on the Hispanic graduation rate. Under this alternative, the African American graduation rate could decline by 5 percentage points rather than 7. Although it would intuitively seem that this would have a more significant impact, the small number of C- and D- grades, relative to the universe of all grades, makes it difficult for this alternative to have a large impact. This alternative also negates any positive impact that these students may derive from the D+ grades, although the number of these is minimal.

4) Over 1,000 students who began in fall 2002, predominantly those who began as New Transfers, have already graduated; 1% of these students would not have had the required 2.0 for graduation under the new policy. Should C-, D+, and D- grades be eliminated, only 0.5% of graduates would be impacted.

<u>Impact on Course Demand:</u>

1) ***Course Demand may change dependent on the acceptance of minus grades.*** Under the current policy, where all letter grades are given the same weight, a "minus" grade is considered acceptable for completion of CORE and major requirements. If the minus grade is no longer accepted for these requirements (i.e., the requirement is the whole number numeric equivalent) course repeats may increase.

2) Each semester, more than 2,500 grades of C- are given in about 700 courses. The new policy could require repetition of this course work depending upon major requirements. ***Overall, this yields a cumulative course repeat impact of about 100 Section Units each semester***. The demand may be absorbed by already existing capacity in those courses without waitlists.

3) If the same analysis considers only courses that typically have waitlists, there is still appreciable demand from students required to repeat the course. ***The total section unit demand generated by C- students for courses with a waitlist is about 80 section Units each semester***. This does not include already existing demand reflected in the waitlist.

4) ***Students earning a C- yielded demand of about 40 additional section units needed each semester in CORE courses.*** Current seat availability and course waitlists may impact this demand. Because many CORE courses are held in large lecture halls, space availability and utilization constraints may also impact the University's ability to offer additional course sections.

5) The potential course demand created by the minus grades could have significant financial implications for the University, if additional sections were required. At a minimum, current resource allocation may be impacted because the need to repeat courses may alter already existing course taking patterns, shifting or changing the demand patterns that currently exist. ***If this were additional demand (versus a shift from demand for other courses) this could cost the University upwards of $320,000 per fiscal year (calculated at $4,000 per section for 40 sections per semester).***

Limitations/Criticism

- This analysis considered only the impact on the undergraduates and undergraduate courses. Similar analysis of the impact on graduate students and courses would be required to fully understand the impact on all students at the University.
- This analysis was limited in its focus. Additional areas of impact to students include Financial Aid (e.g., would recipients of merit based aid remain eligible) and consideration for graduate school (e.g., would the student's merit in the application process be impacted) as well as many others.

<u>Graduation Rate Model Limitations:</u>

- The model assumes that student behavior will not change. One purpose of plus/minus grades was to motivate all students in the grade distribution to work hard all semester long. It might be posited that C- students will rise to the expectation of C grades.

- Inherent in the calculations for changes in graduation rates is the assumption that the additional dismissals would persist to graduation; this may overstate the impact on the graduation rates.

- The replacement of repeat course grades within the first 24 credits has not been incorporated into the semester GPA calculation (though it has, to the best of our knowledge, been accounted for in the cumulative GPA).

- The dismissals for spring 2003 were calculated off of a 2.0; the actual dismissals were calculated with a slightly lower GPA during implementation of the new Probation and Dismissal policy.

<u>Course Demand Model Limitations:</u>

- The sum of Course Units from C- students are made up of small fractions that could be absorbed next term in the non-wait-list and wait-list courses.

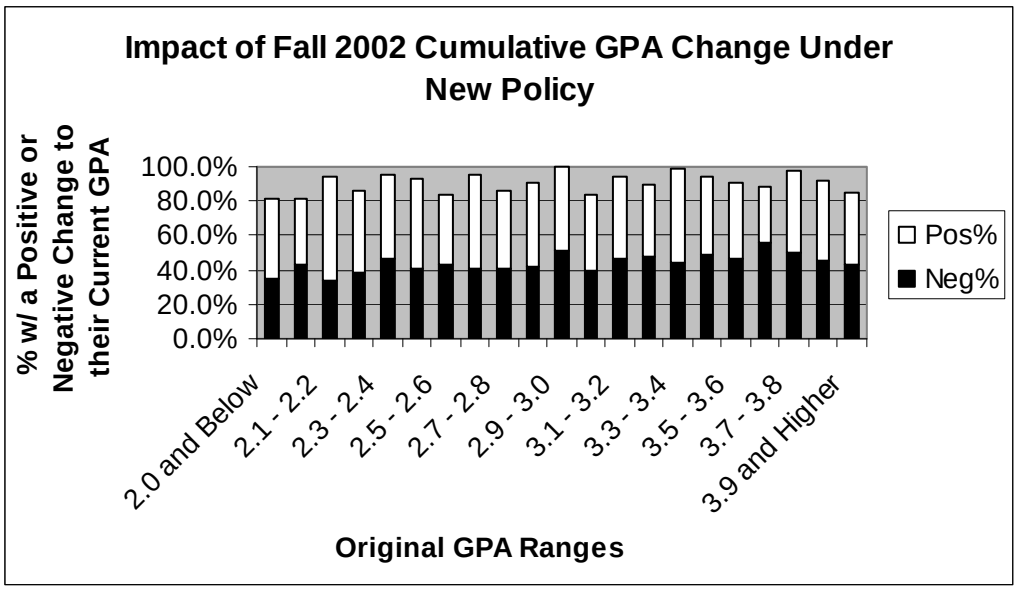
- C- Students may shift demand by requiring more sections offered in core or lower-level courses. If so, demand for upper level and sequential courses may be lower, which will allow those instructors to switch their teaching load.

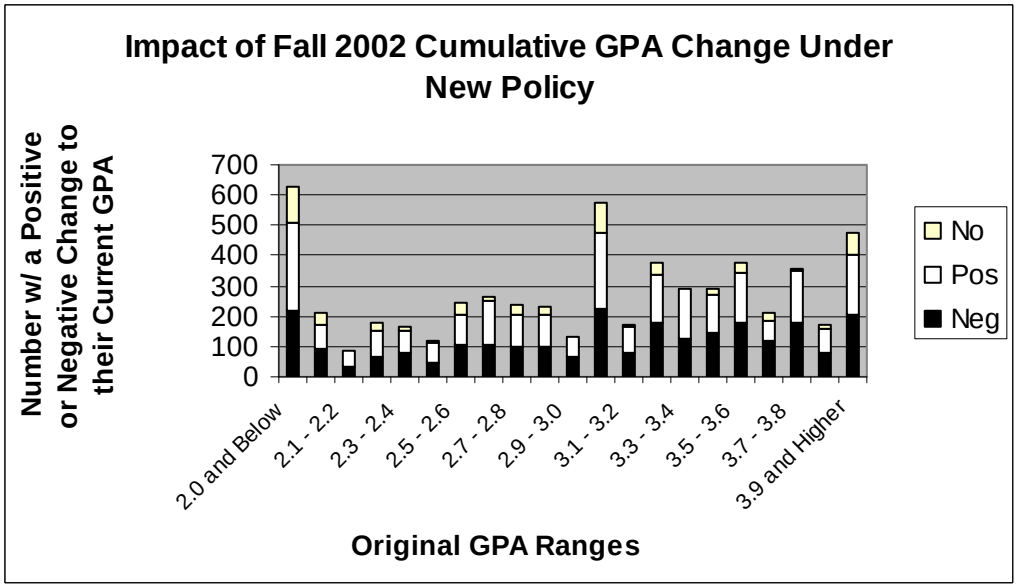
- To the extent that the requirement is a D (1.0) rather than a C, this methodology may overstate demand.

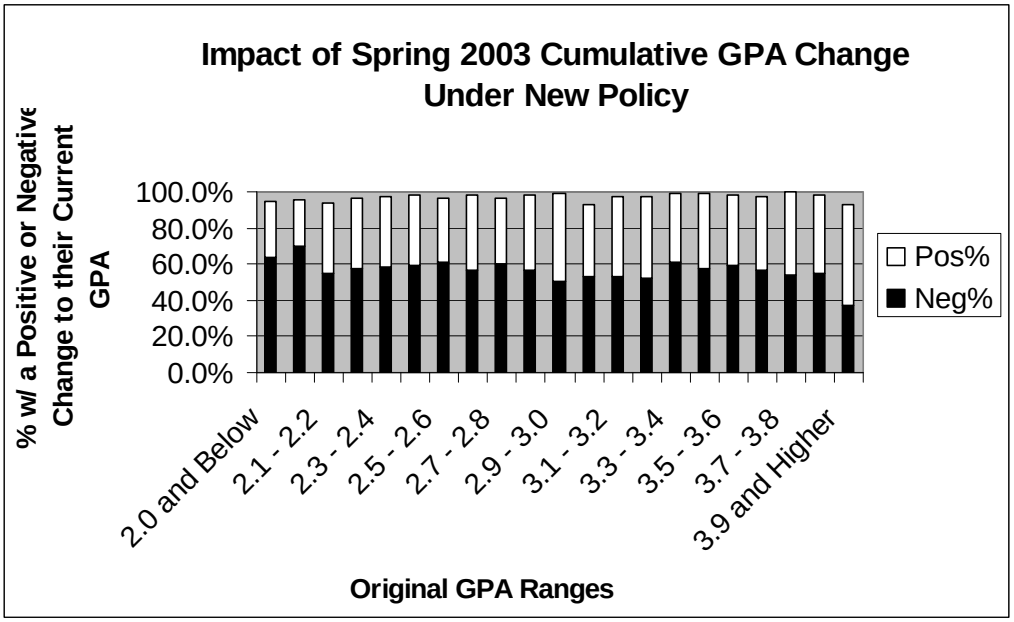
Appendix

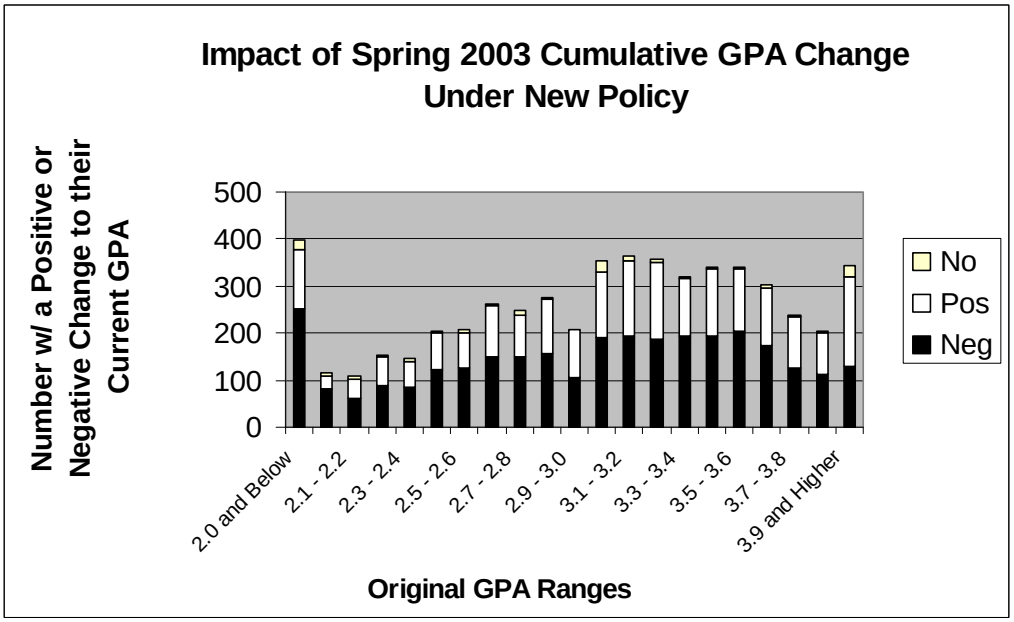
Analyses 1.A Tables: Effect of new policy on Cumulative GPAs for New Fall 2002 Students.

*** Note: Percent bars may not total 100% because students without GPA changes are not represented with a bar.**






Impact of Spring 2003 Cumulative GPA Change Under New Policy
% w/ a Positive or Negative Change to their Current GPA
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
Pos%
Neg%
2.0 and Below
2.1 - 2.2
2.3 - 2.4
2.5 - 2.6
2.7 - 2.8
2.9 - 3.0
3.1 - 3.2
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges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Number w/ a Positive or Negative Change to their Current GPA
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2.5 - 2.6
2.7 - 2.8
2.9 - 3.0
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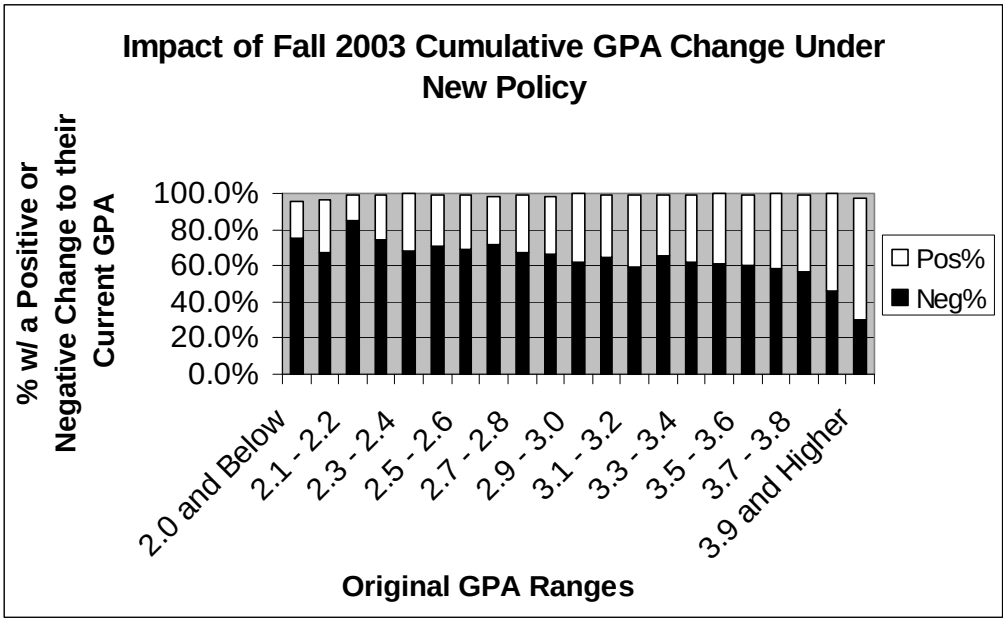
3.7 - 3.8
3.9 and Higher
Original GPA Ranges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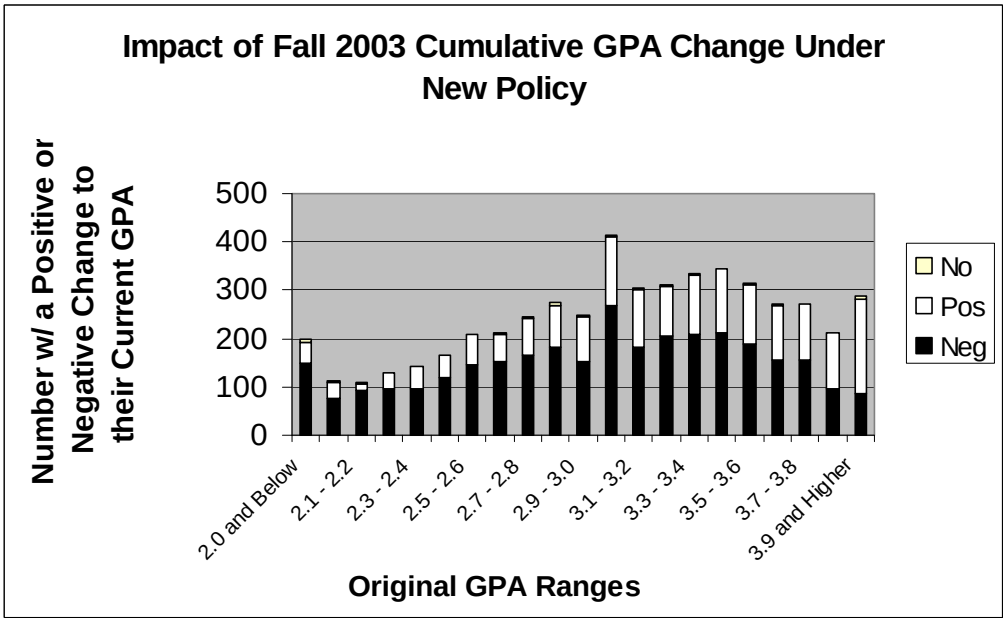
Original GPA Ranges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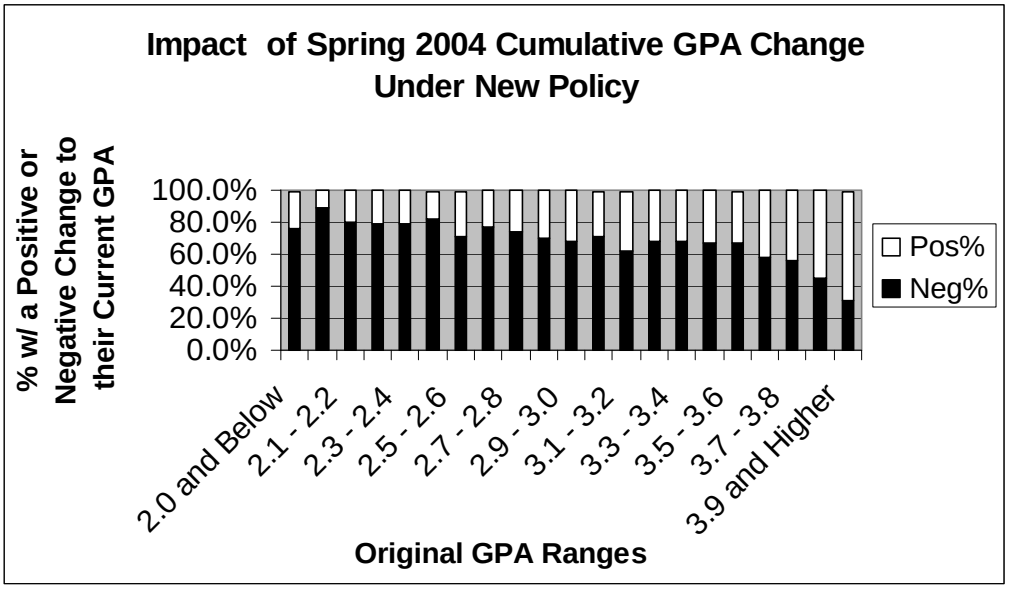
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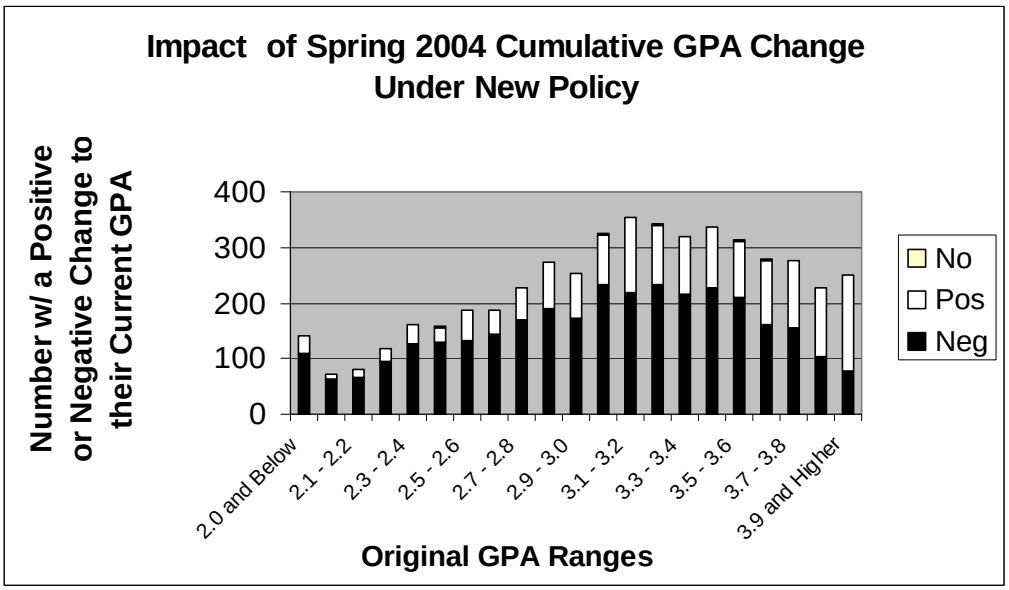
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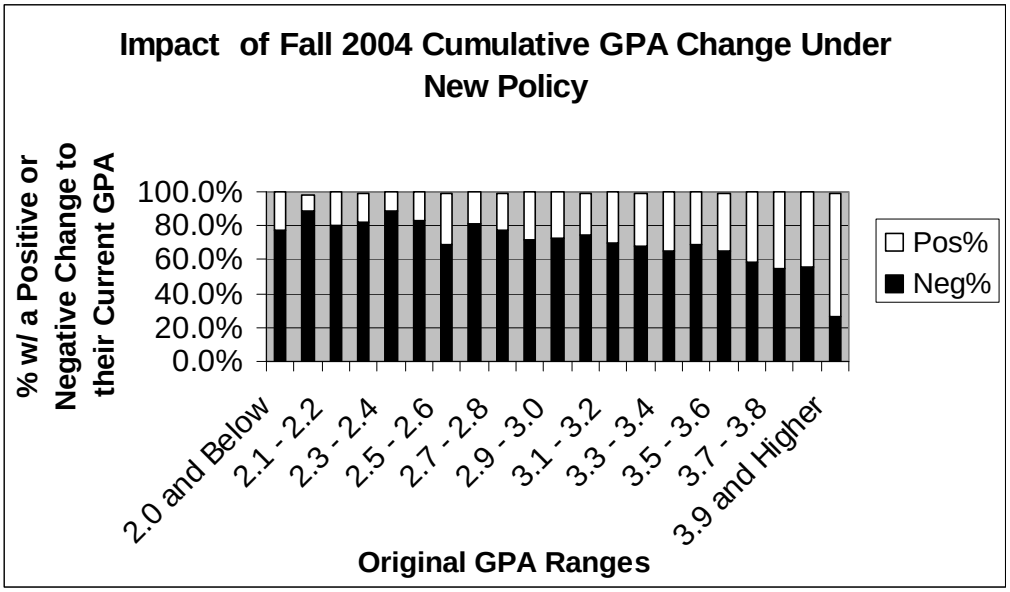
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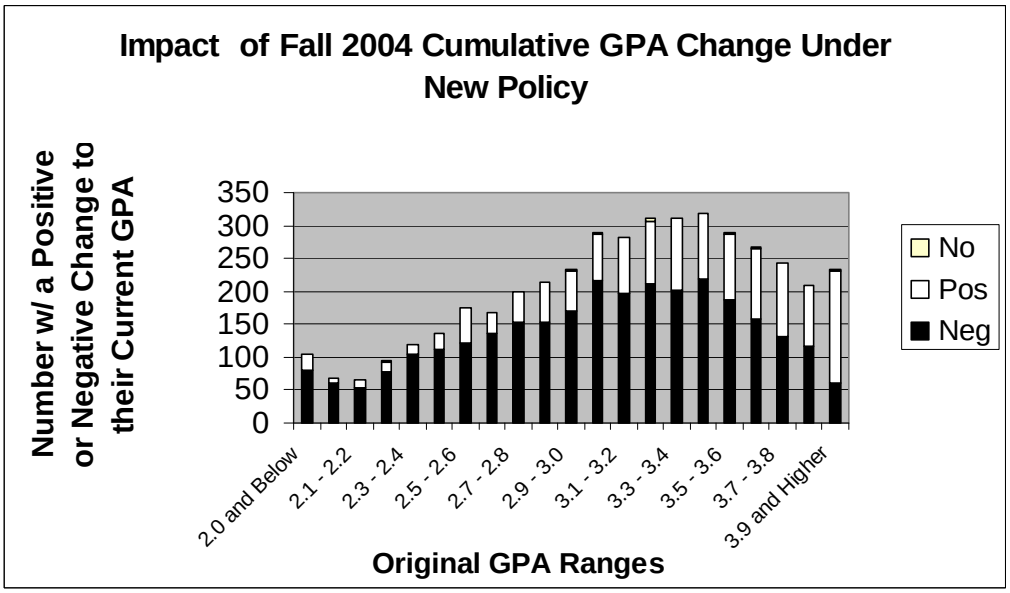
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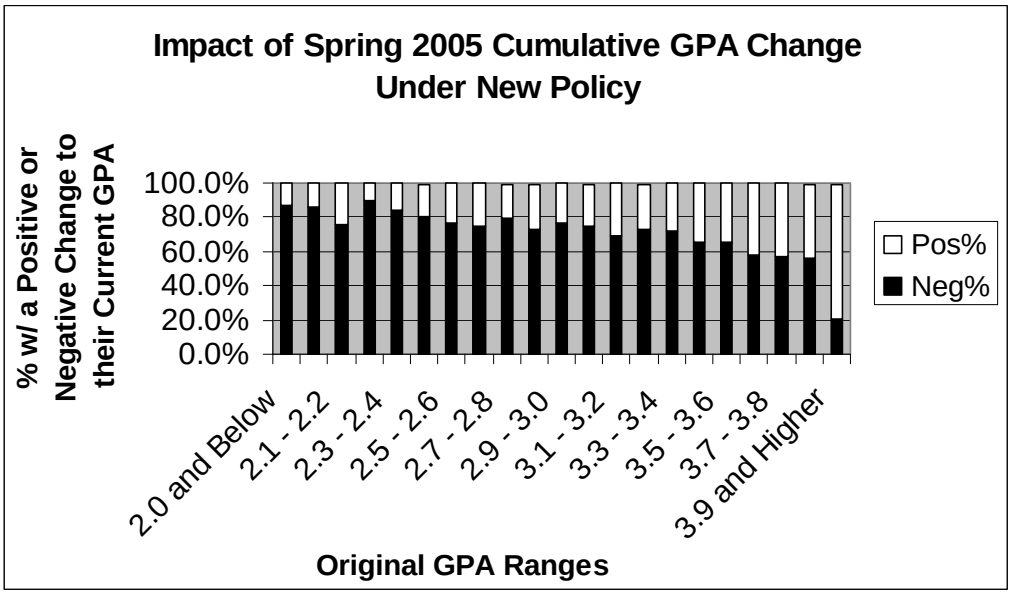
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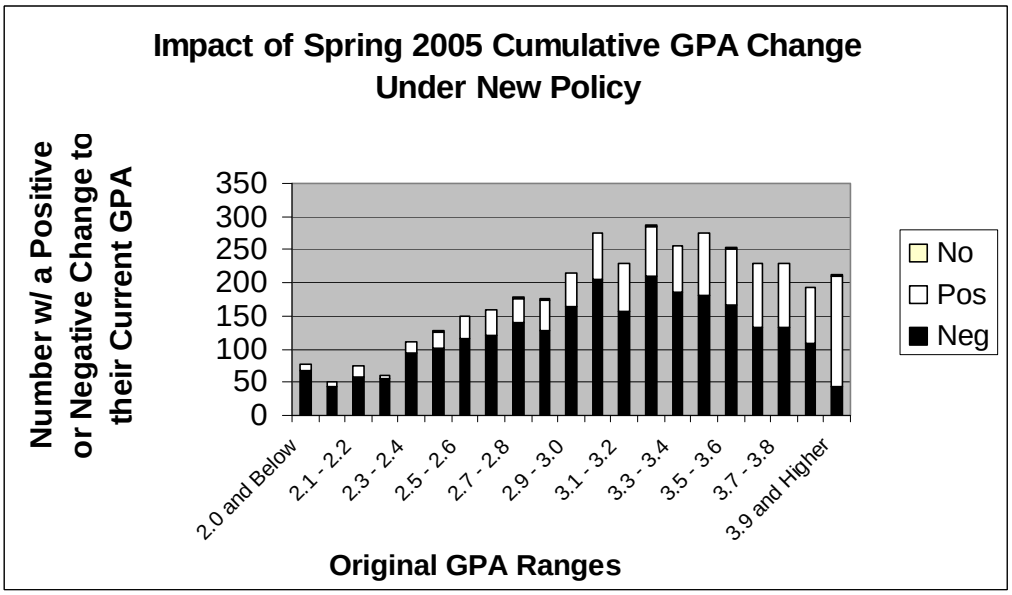
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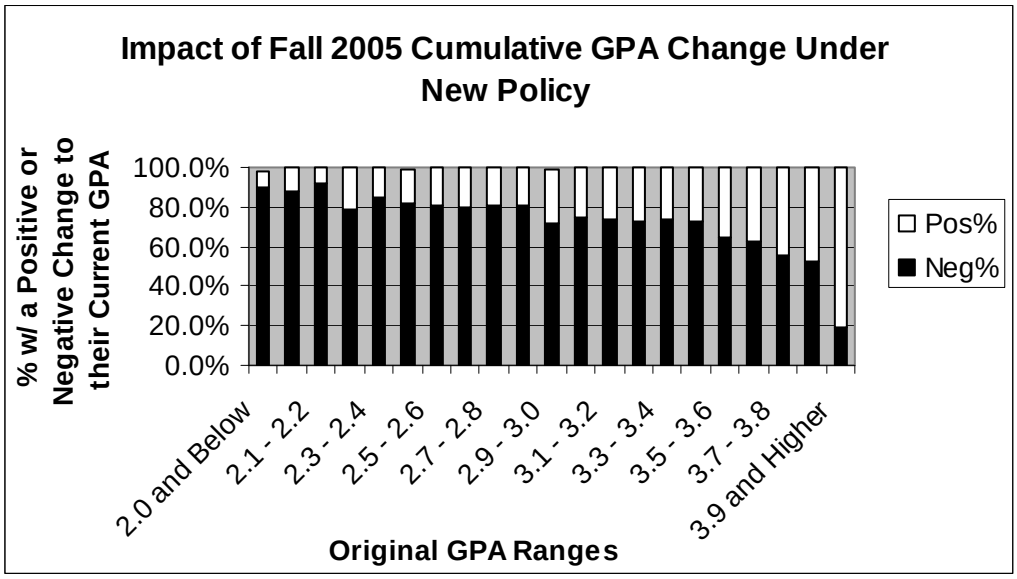
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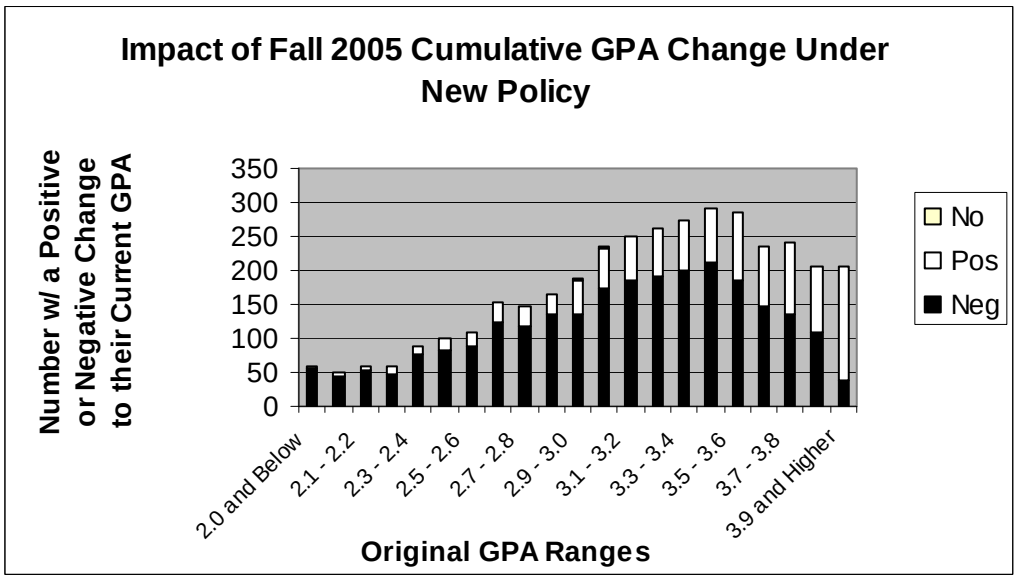
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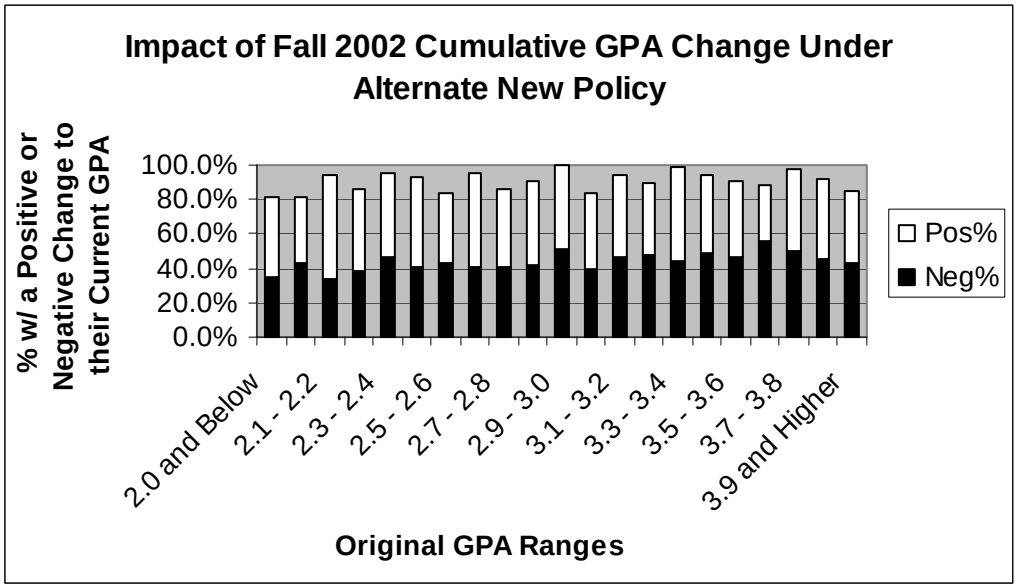
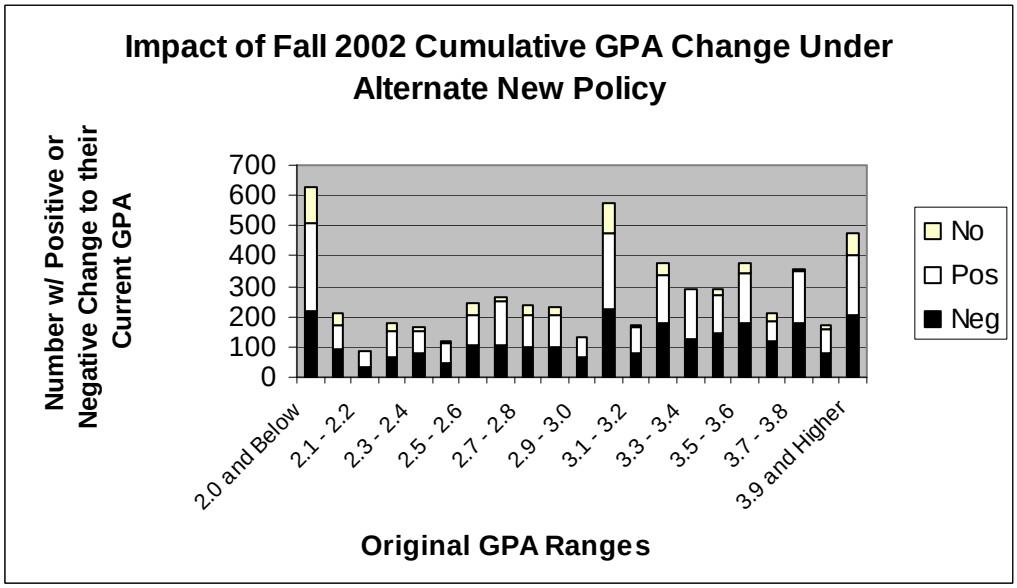
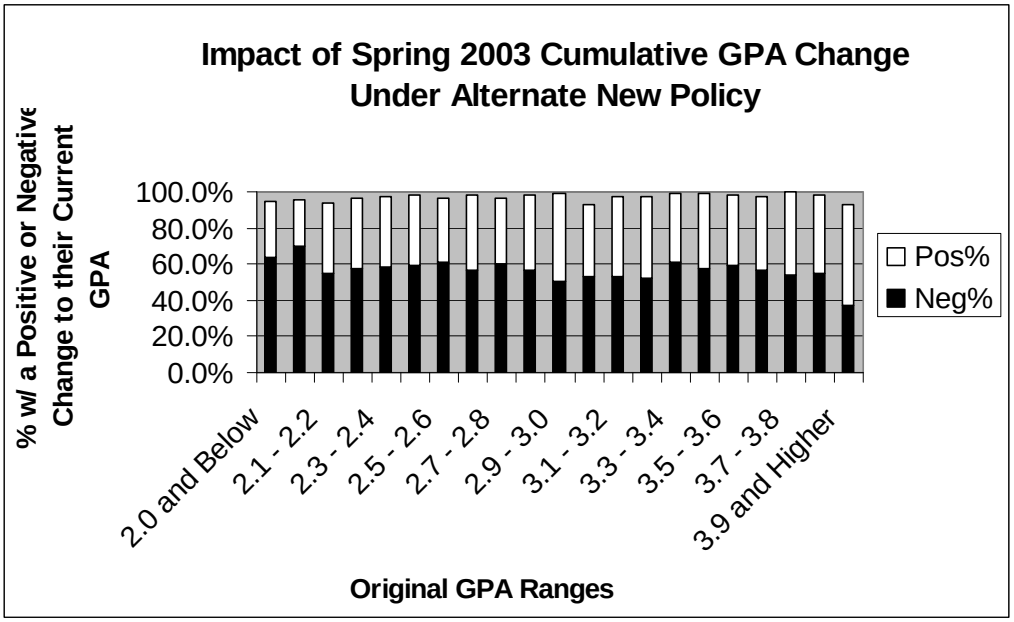
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges

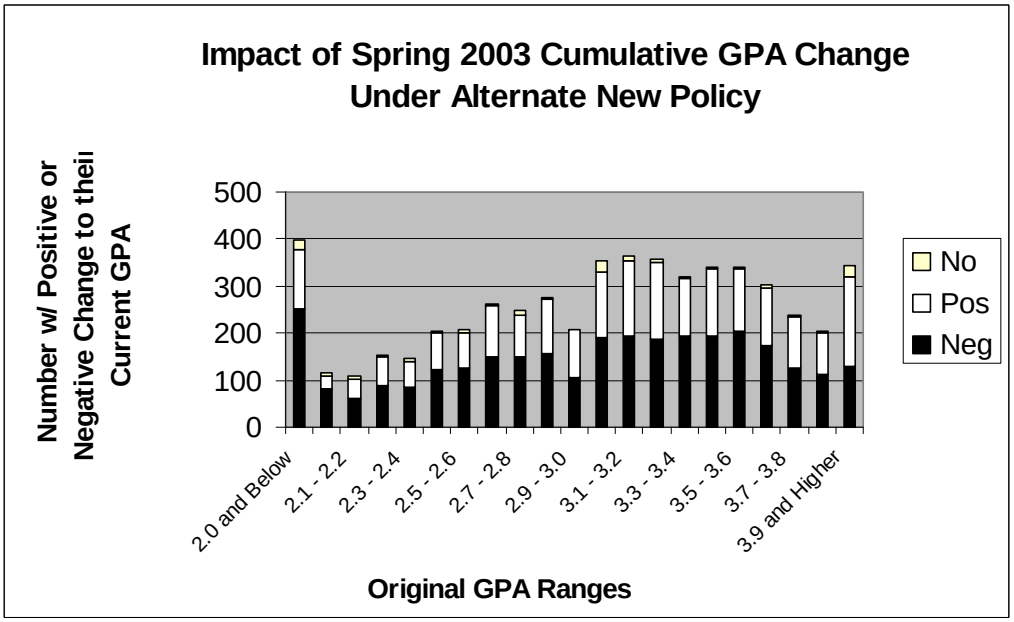
Analyses 1.B Tables: Effect of ALTERNATE new policy on Cumulative GPAs for New Fall 2002 Students (2.0 for C- and all Ds have a 1.0)

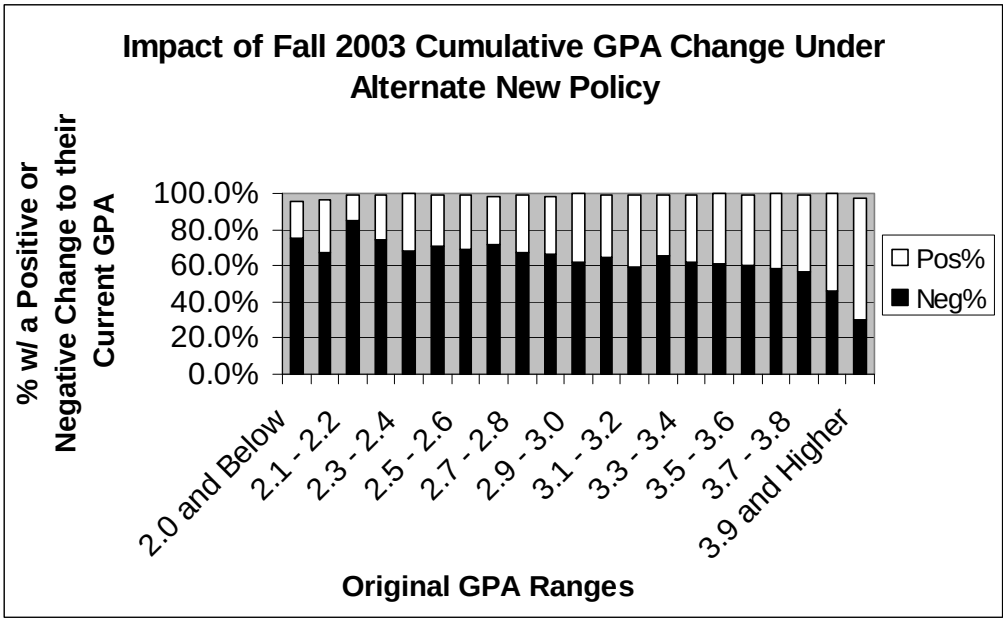
*** Note: Percent bars may not total 100% because students without GPA changes are not represented with a bar.**

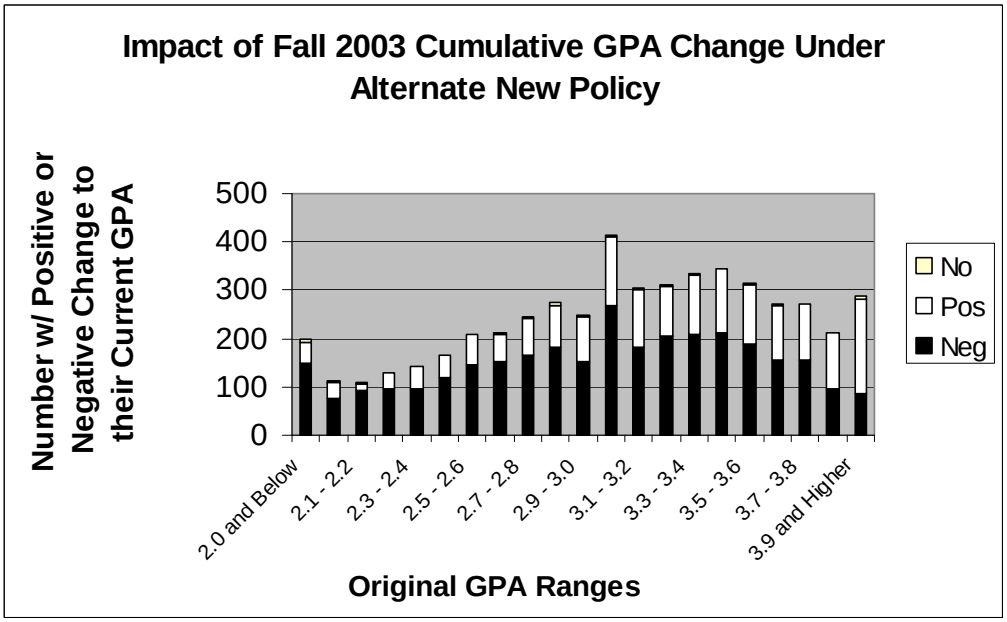





Impact of Spring 2003 Cumulative GPA Change
Under Alternate New Policy
% w/ a Positive or Negative
Change to their Current
GPA
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
Pos%
Neg%
2.0 and Below
2.1 - 2.2
2.3 - 2.4
2.5 - 2.6
2.7 - 2.8
2.9 - 3.0
3.1 - 3.2
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges


Impact of Spring 2003 Cumulative GPA Change
Under Alternate New Policy
Number w/ Positive or
Negative Change to their
Current GPA
500
400
300
200
100
0
No
Pos
Neg
2.0 and Below
2.1 - 2.2
2.3 - 2.4
2.5 - 2.6
2.7 - 2.8
2.9 - 3.0
3.1 - 3.2
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges


Impact of Fall 2003 Cumulative GPA Change Under Alternate New Policy
% w/ a Positive or Negative Change to their Current GPA
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
Pos%
Neg%
2.0 and Below
2.1 - 2.2
2.3 - 2.4
2.5 - 2.6
2.7 - 2.8
2.9 - 3.0
3.1 - 3.2
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges


Impact of Fall 2003 Cumulative GPA Change Under Alternate New Policy
Number w/ Positive or Negative Change to their Current GPA
500
400
300
200
100
0
No
Pos
Neg
2.0 and Below
2.1 - 2.2
2.3 - 2.4
2.5 - 2.6
2.7 - 2.8
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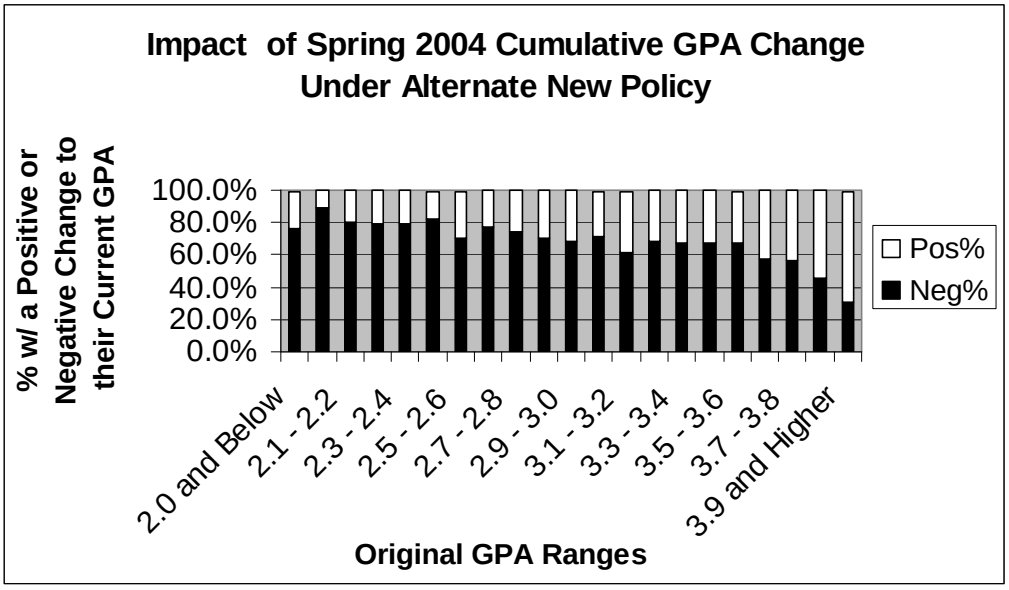
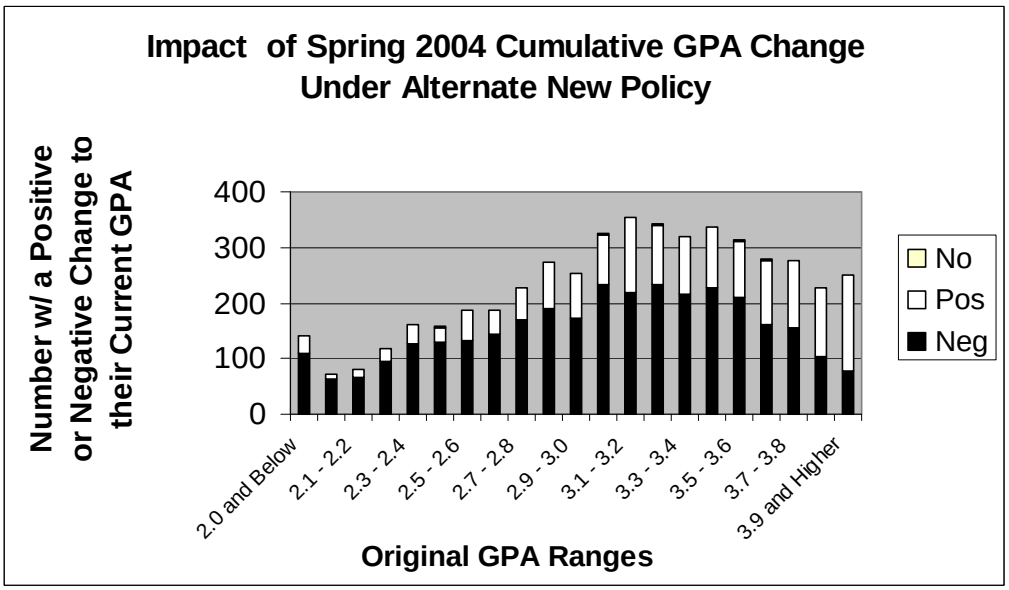
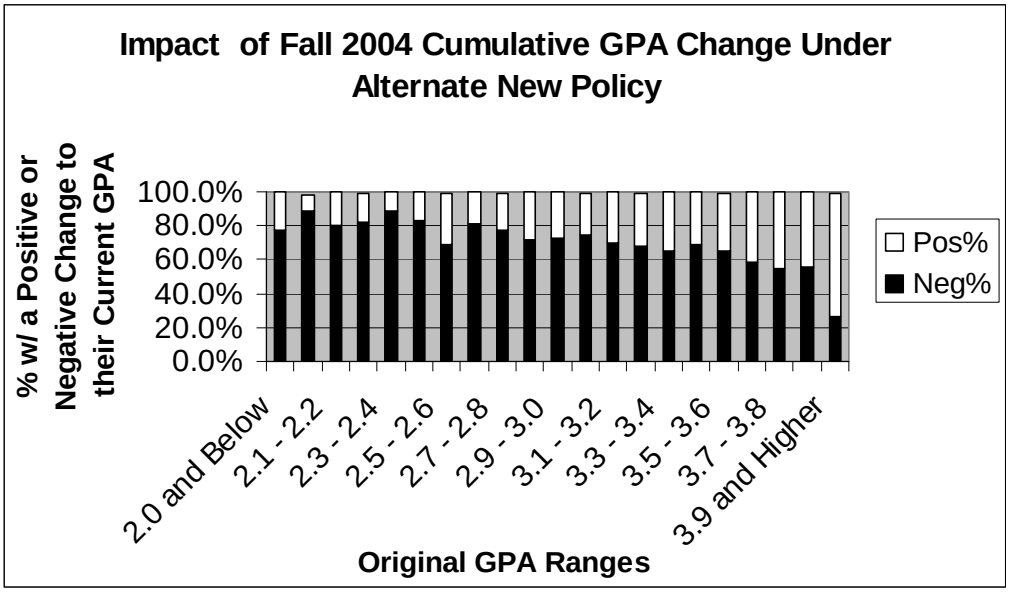
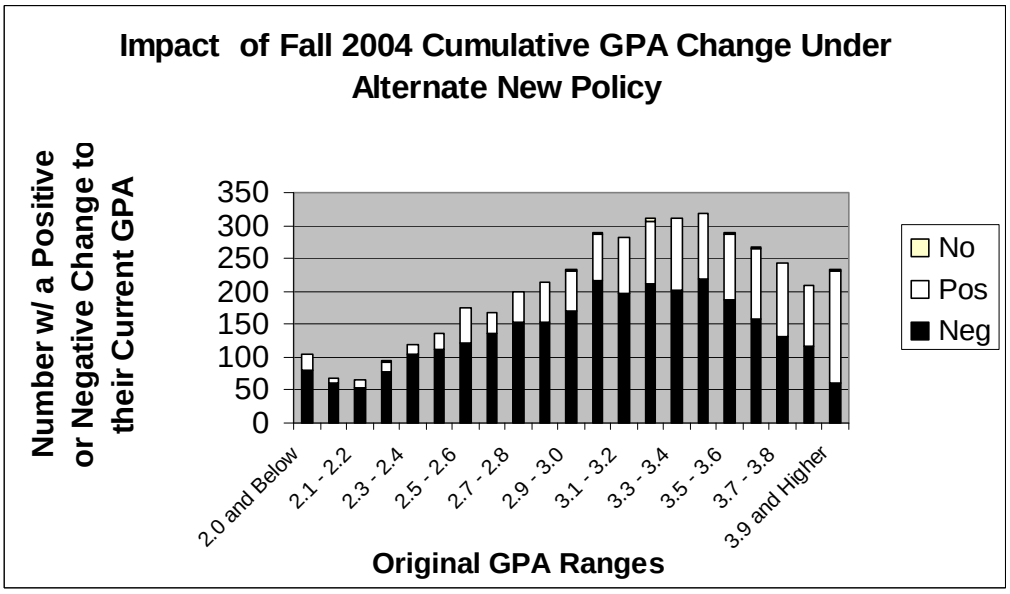
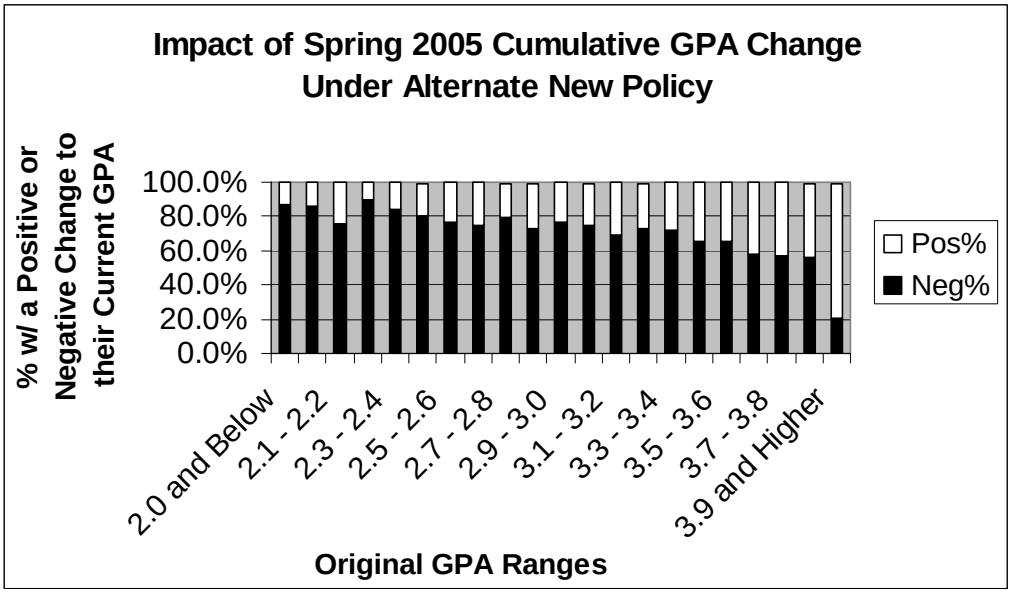
3.1 - 3.2
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges


Impact of Spring 2004 Cumulative GPA Change
Under Alternate New Policy
% w/ a Positive or Negative Change to their Current GPA
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
Pos%
Neg%
2.0 and Below
2.1 - 2.2
2.3 - 2.4
2.5 - 2.6
2.7 - 2.8
2.9 - 3.0
3.1 - 3.2
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges


Impact of Spring 2004 Cumulative GPA Change
Under Alternate New Policy
Number w/ a Positive or Negative Change to their Current GPA
400
300
200
100
0
No
Pos
Neg
2.0 and Below
2.1 - 2.2
2.3 - 2.4
2.5 - 2.6
2.7 - 2.8
2.9 - 3.0
3.1 - 3.2
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges


Impact of Fall 2004 Cumulative GPA Change Under Alternate New Policy
% w/ a Positive or Negative Change to their Current GPA
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
Pos%
Neg%
2.0 and Below
2.1 - 2.2
2.3 - 2.4
2.5 - 2.6
2.7 - 2.8
2.9 - 3.0
3.1 - 3.2
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges


Impact of Fall 2004 Cumulative GPA Change Under Alternate New Policy
Number w/ a Positive or Negative Change to their Current GPA
350
300
250
200
150
100
50
0
No
Pos
Neg
2.0 and Below
2.1 - 2.2
2.3 - 2.4
2.5 - 2.6
2.7 - 2.8
2.9 - 3.0
3.1 - 3.2
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges


Impact of Spring 2005 Cumulative GPA Change
Under Alternate New Policy
% w/ a Positive or Negative Change to their Current GPA
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
Pos%
Neg%
2.0 and Below
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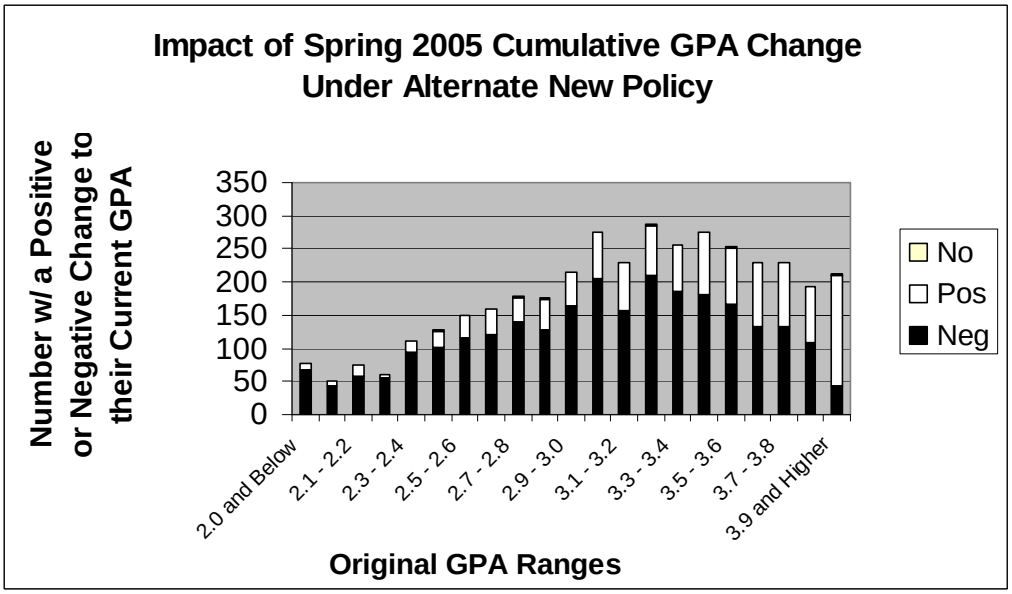
2.3 - 2.4
2.5 - 2.6
2.7 - 2.8
2.9 - 3.0
3.1 - 3.2
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges


Impact of Spring 2005 Cumulative GPA Change
Under Alternate New Policy
Number w/ a Positive or Negative Change to their Current GPA
350
300
250
200
150
100
50
0
No
Pos
Neg
2.0 and Below
2.1 - 2.2
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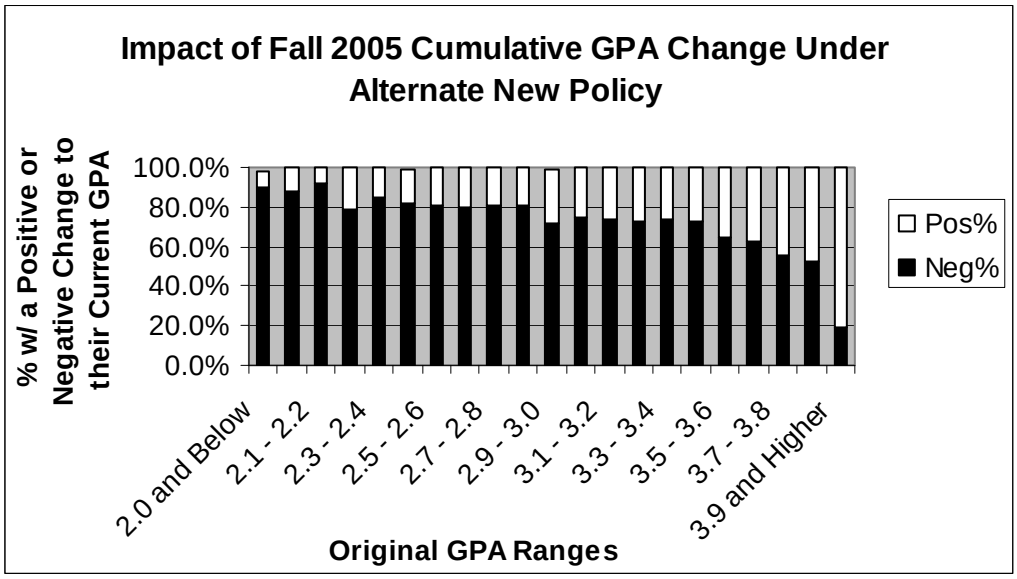
3.9 and Higher
Original GPA Ranges


Impact of Fall 2005 Cumulative GPA Change Under Alternate New Policy
% w/ a Positive or Negative Change to their Current GPA
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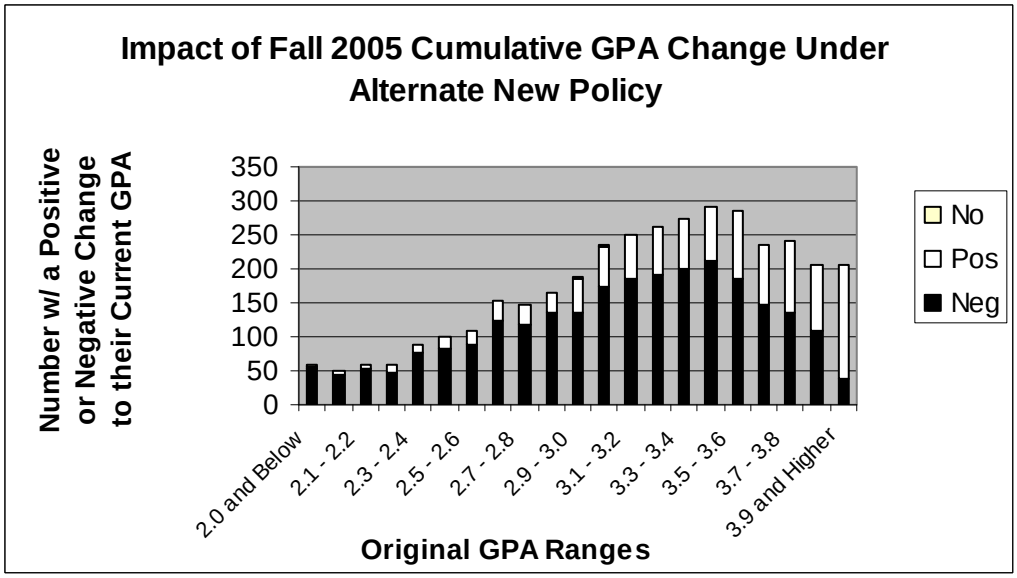
3.1 - 3.2
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges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Number w/ a Positive or Negative Change to their Current GPA
350
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250
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150
100
50
0
No
Pos
Neg
2.0 and Below
2.1 - 2.2
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2.7 - 2.8
2.9 - 3.0
3.1 - 3.2
3.3 - 3.4
3.5 - 3.6
3.7 - 3.8
3.9 and Higher
Original GPA Ranges

Analyses 2 Table: Academic Dismissals

TOTAL DISMISSED BY RACE

	Total	American Indian	Asian	African American	Hispanic	White	All Other
Total New Freshmen	4000	25	475	450	300	2500	250
Current Number Dismissed	200	5	25	75	25	75	25
% of New Freshmen Dismissed	5%	20%	5%	17%	8%	3%	10%
New Policy	300	10	50	100	50	125	50
Change of New Policy	100	5	25	25	25	50	25
% Dismissed Under New Policy	8%	40%	11%	22%	17%	5%	20%
Alt New Policy	250	10	40	90	40	100	40
Change of Alternate New Policy	50	5	15	15	15	25	15
% Dismissed Alt New Policy	6%	40%	8%	20%	13%	4%	16%

NOTE: The numbers above are not actuals - they are intended to illustrate the process and not actual UM results

Analysis 3 Tables: Section Unit Increases:

Use of C- Grades and Approximate Impact (in Section Units) from Required Repeats

Total Section Units by Colleges

	Fall03				Spring 04				Fall 04				Spring 05			
College	**C-**	**# Crs**	**AVG Sec**	**Sec. Unit**	**C-**	**# Courses**	**AVG Sec**	**Sec. Unit**	**C-**	**# Courses**	**AVG Sec**	**Sec. Unit**	**C-**	**# Courses**	**AVG Sec**	**Sec. Unit**
A	75	25	30.0	2.5	100	25	40.0	2.5	75	35	35.0	2.1	50	25	30.0	1.7
B	40	10	45.0	0.9	25	5	40.0	0.6	40	10	50.0	0.8	25	10	45.0	0.6
C	800	250	30.0	26.7	800	250	30.0	26.7	850	250	30.0	28.3	750	250	25.0	30.0
D	275	50	35.0	7.9	225	35	35.0	6.4	200	40	35.0	5.7	175	40	35.0	5.0
E	600	125	50.0	12.0	600	125	50.0	12.0	625	125	50.0	12.5	575	125	55.0	10.5
F	300	50	40.0	7.5	235	50	40.0	5.9	300	40	35.0	8.6	200	40	40.0	5.0
G	475	75	40.0	11.9	400	100	35.0	11.4	425	100	35.0	12.1	425	100	35.0	12.1
H	75	25	40.0	1.9	50	25	35.0	1.4	50	25	35.0	1.4	50	25	35.0	1.4
I	250	75	40.0	6.3	225	50	30.0	7.5	275	75	35.0	7.9	225	60	35.0	6.4
J	100	25	50.0	2.0	100	25	50.0	2.0	100	25	45.0	2.2	100	30	45.0	2.2
K	25	10	30.0	0.8	25	10	40.0	0.6	20	10	35.0	0.6	25	10	40.0	0.6
L	50	25	25.0	2.0	10	10	35	0.29	20	10	25	0.8	20	10	30	0.67
TOTAL (ALL)	**3065**	**745**	**37.9**	**82.2**	**2795**	**710**	**38.3**	**77.4**	**2980**	**745**	**37.1**	**83.1**	**2620**	**725**	**37.5**	**76.2**

C- is the number of students that received a C- grade

 # CRS is the number of course that gave out a grade of C-

AVG Sec is the average section size of all section that had C- grades

Sec. Unit is the sum of each the impact of each C- student on each course. The impact was calculated by dividing the number of students who received a C- in a course by the section size of that course

Impact of C- and Course Waitlist on Course Availability (in Section Units)

	Fall03				Spring 04				Fall 04				Spring 05			
College	**C- & Wait**	**# Crs**	**AVG Sec**	**Sec. Unit**	**C- & Wait**	**# Courses**	**AVG Sec**	**Sec. Unit**	**C- & Wait**	**# Courses**	**AVG Sec**	**Sec. Unit**	**C- & Wait**	**# Courses**	**AVG Sec**	**Sec. Unit**
A	10	5	30.0	0.3	30	1	40.0	0.8	25	5	35.0	0.6	10	3	30.0	0.3
B	25	5	45.0	0.6	25	3	40.0	0.6	35	5	50.0	1.7				
C	1300	125	30.0	43.3	1150	100	30.0	38.3	1300	125	30.0	51.1	1375	135	25.0	55.0
D	300	25	35.0	8.6	200	25	35.0	5.7	250	25	35.0	7.0	150	20	35.0	4.3
E	1200	75	50.0	24.0	1100	80	50.0	22.0	1100	75	50.0	29.1	1000	75	55.0	18.2
F	275	25	40.0	6.9	250	25	40.0	6.3	275	25	35.0	12.1	225	20	40.0	5.6
G	400	30	40.0	10.0	350	35	35.0	10.0	400	35	35.0	14.9	300	30	35.0	8.6
H	50	5	40.0	1.3	75	10	35.0	2.1	50	10	35.0	1.7	100	10	35.0	2.9
I	175	25	40.0	4.4	150	25	30.0	5.0	200	25	35.0	8.9	175	25	35.0	5.0
J	175	20	50.0	3.5	200	20	50.0	4.0	225	25	45.0	5.6	250	25	45.0	5.6
K	20	5	30.0	0.7	40	10	40.0	1.0	25	10	35.0	1.1	10	5	40.0	0.3
L	0	1	25.0	0	20	5	35	0.571	10	10	25	0.536	10	5	30	0.333
TOTAL (ALL)	**3930**	**346**	**37.9**	**103.5**	**3590**	**339**	**38.3**	**96.4**	**3895**	**375**	**37.1**	**134.4**	**3605**	**353**	**36.8**	**106.0**

C- & Wait is the number of students that received a C- grade combined with the waitlist
 # CRS is the number of course with a waitlist and gave out grade of C-
AVG Sec is the average section size of all sections
Sec. Unit is the sum of each the impact of each C- plus waitlist on each course. The impact was calculated by dividing the number of students