

The Pluses and Minuses of Policy Analysis: Predicting the Impact of a New Grading Policy



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History/Purpose

- University Senate policy assigning graduated numerical values to plus and minus grades – Fall 2005
 - Passed assuming no financial impact
 - Minus earns .3 less and plus earns .3 more
- Prior to policy change, plus/minus grades assigned, but all grades with same letter had same numeric value
- Current analysis: identify potential financial and academic impacts for University and undergraduate students



Previous Research

- Potential positives of plus/minus grading systems:
 - Incentive to work hard all term
 - Rewards students at multiple levels - better distinguish the quality of graduates
 - Increased grading accuracy
 - No overall GPA change at the institution for any given semester
 - Graduate school admissions - tool to help committees distinguish between students
- Potential Negatives:
 - the decrease in the number of 4.0 graduates
 - Increased negative impact on lower GPAs
 - Negative impact on 3.5 - 4.0 students - students perceived potential for loss of scholarship
 - Increased grade appeals, and increased grade changes
- Unaddressed by these studies
 - Cumulative impact on GPA
 - Financial implications beyond administrative costs to the institution
- Still debated: Grade Inflation



Issues for UM

- How do the adjusted numeric values impact the GPAs of students over time?
 - What happens with probation and dismissal (which are based on a 2.0 GPA)?
 - How many students would be negatively impacted?
- Do the C- and D- grades fulfill CORE and program requirements?
 - If not, how will that impact course availability and progress toward a degree?



Methodology

Impact on GPA Over Time

- Recalculate UG GPA of Fall 2002 New Frosh Cohort
 - UM reported plus and minuses since 2002 w/o weights
- Recalculate Academic Actions
 - Determine which students would be on probation or dismissed given the new policy

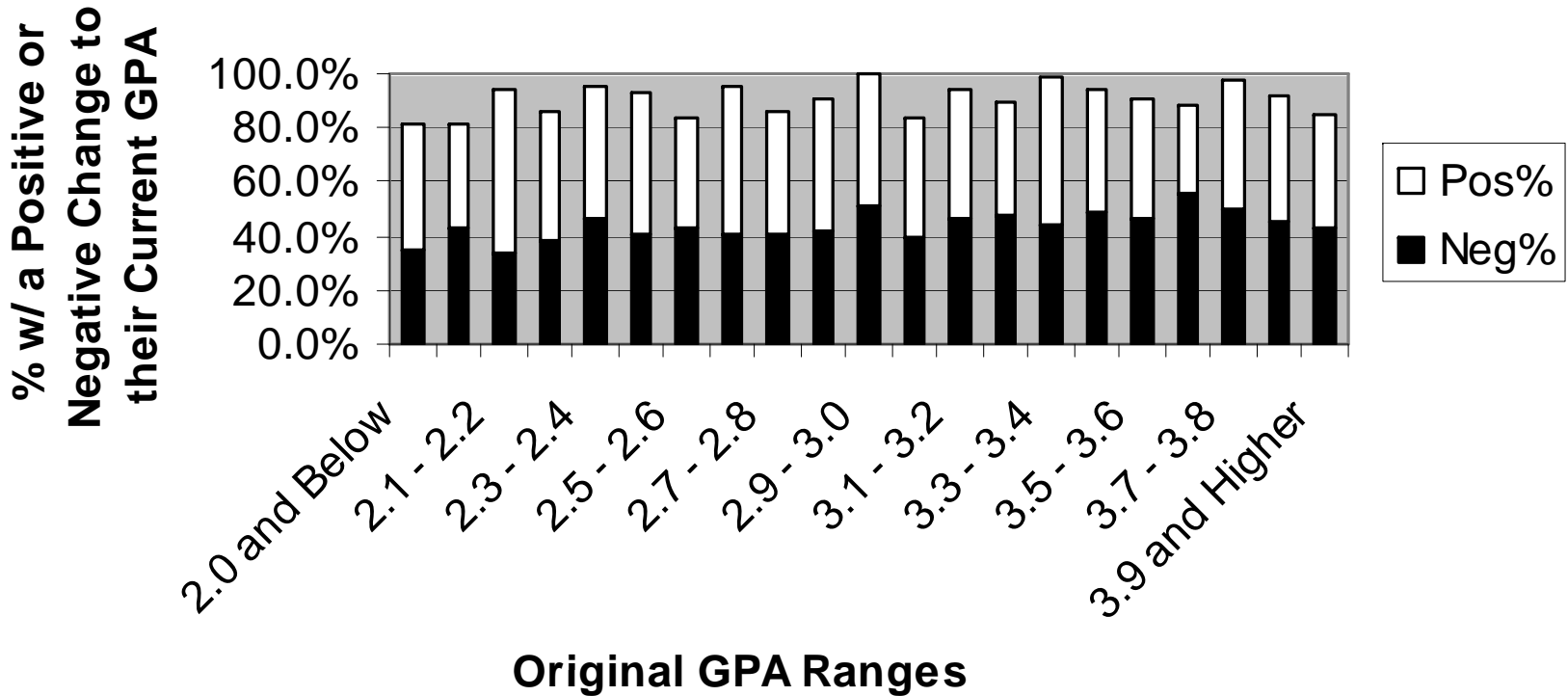
Impact on Course Availability

- Calculate the number of C- per course to estimate repeat impact
 - C- would be below the 2.0 grade needed to pass a course



First Semester Cumulative GPA Change

Impact of Fall 2002 Cumulative GPA Change Under New Policy

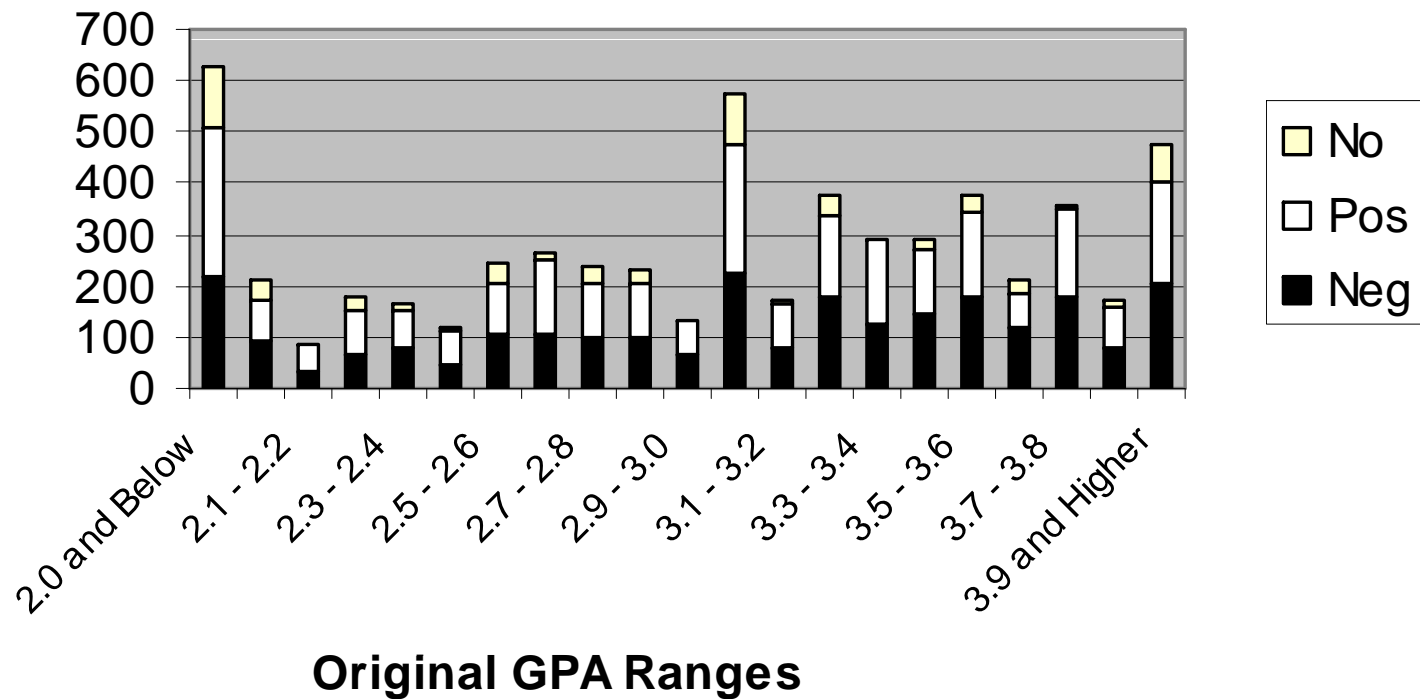




First Semester Cumulative GPA Change

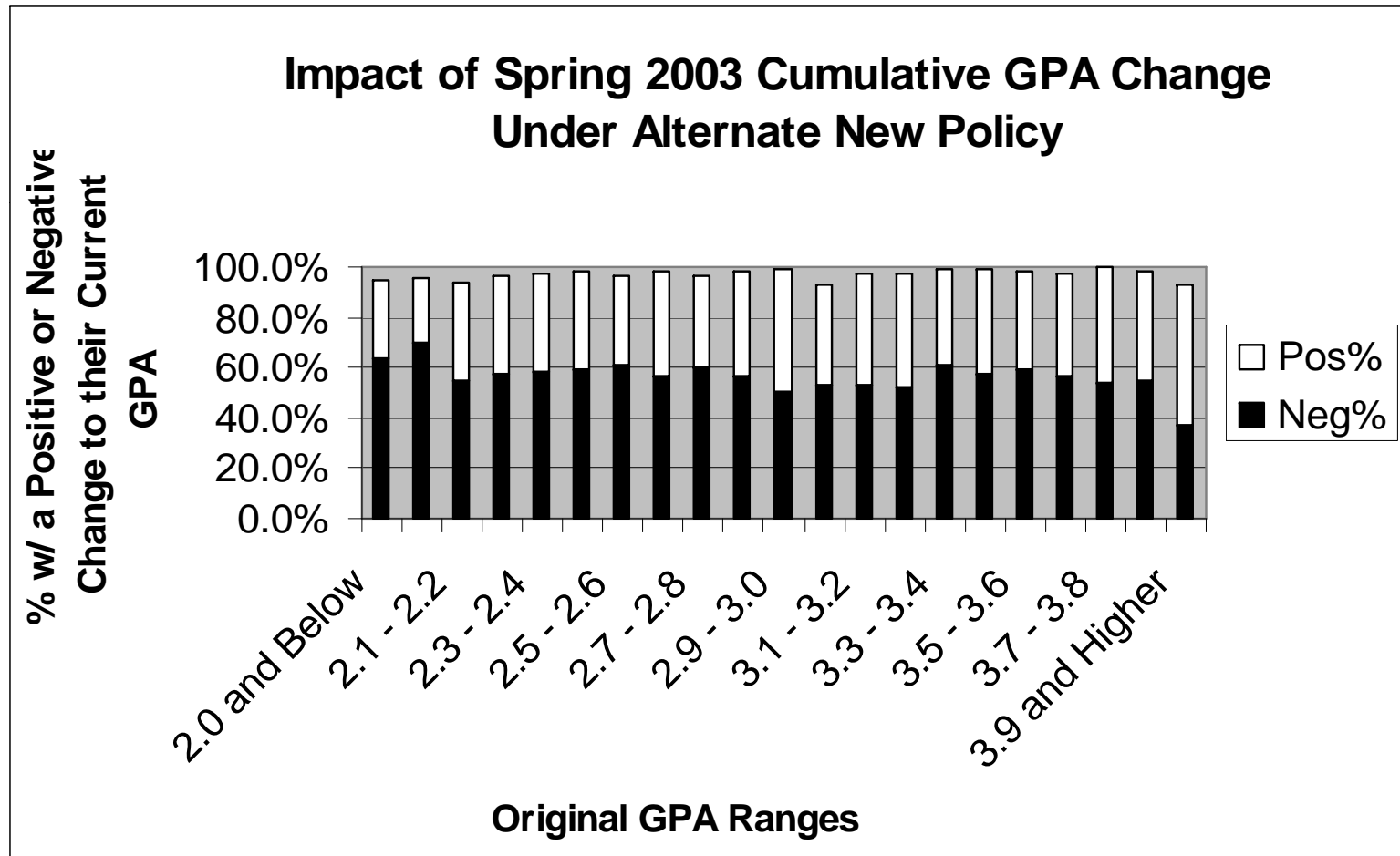
Impact of Fall 2002 Cumulative GPA Change Under New Policy

Number w/ a Positive or Negative Change to their Current GPA





Second Semester Cumulative GPA Change

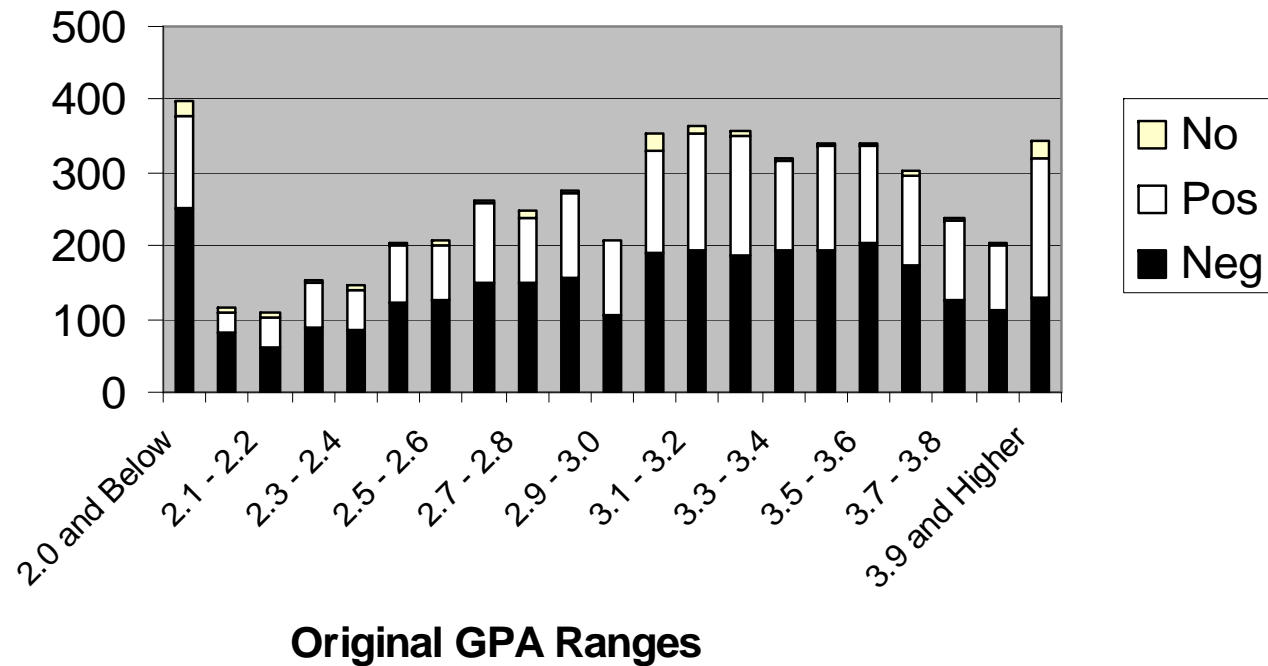




Second Semester Cumulative GPA Change

Impact of Spring 2003 Cumulative GPA Change Under Alternate New Policy

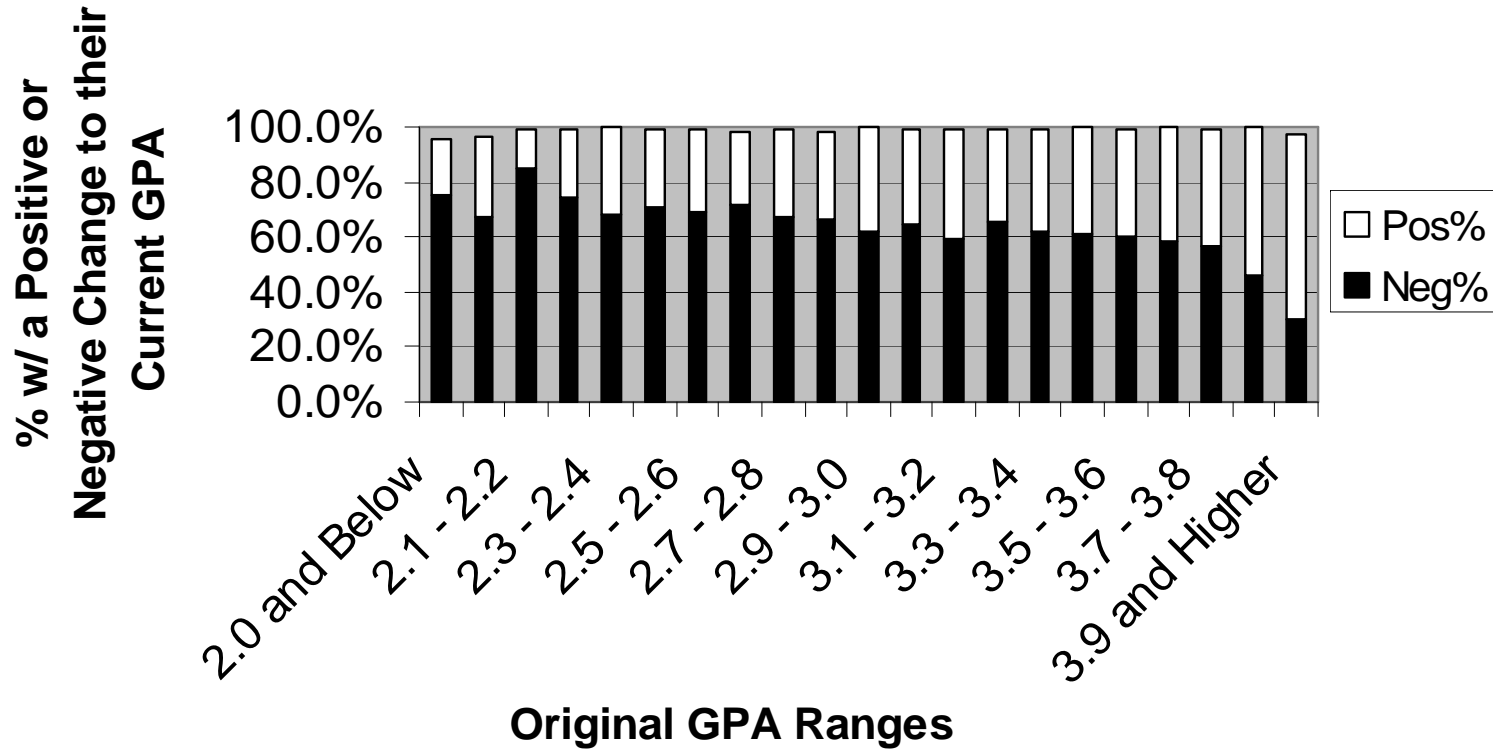
Number w/ Positive or Negative Change to their Current GPA





Third Semester Cumulative GPA Change

Impact of Fall 2003 Cumulative GPA Change Under Alternate New Policy

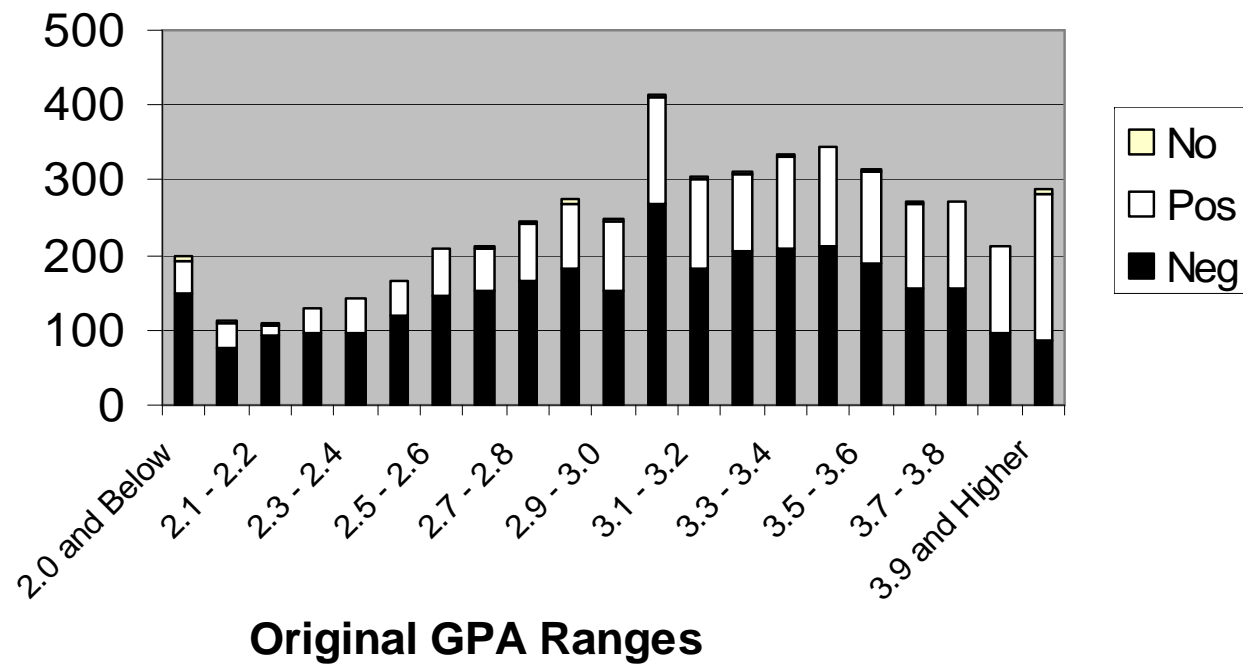




Fourth Semester Cumulative GPA Change

Impact of Fall 2003 Cumulative GPA Change Under Alternate New Policy

Number w/ Positive or Negative Change to their Current GPA

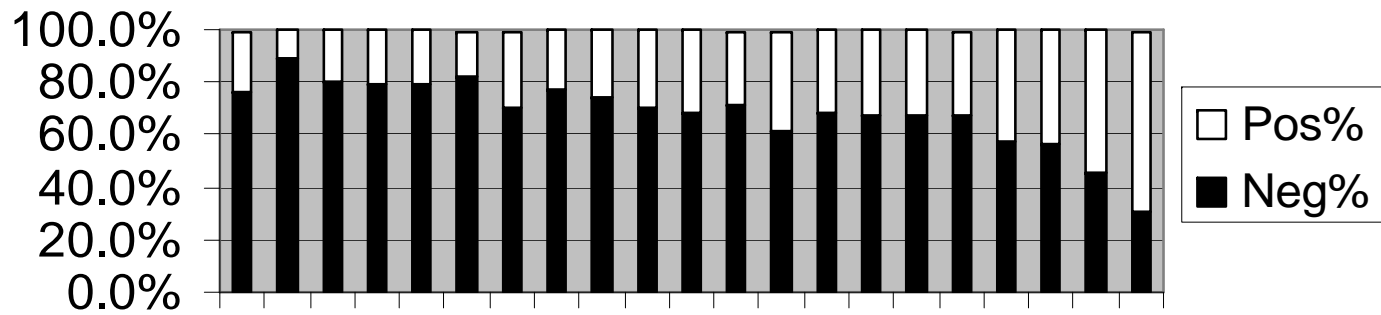




Fifth Semester Cumulative GPA Change

Impact of Spring 2044 Cumulative GPA Change Under Alternate New Policy

% w/ a Positive or Negative Change to their Current GPA



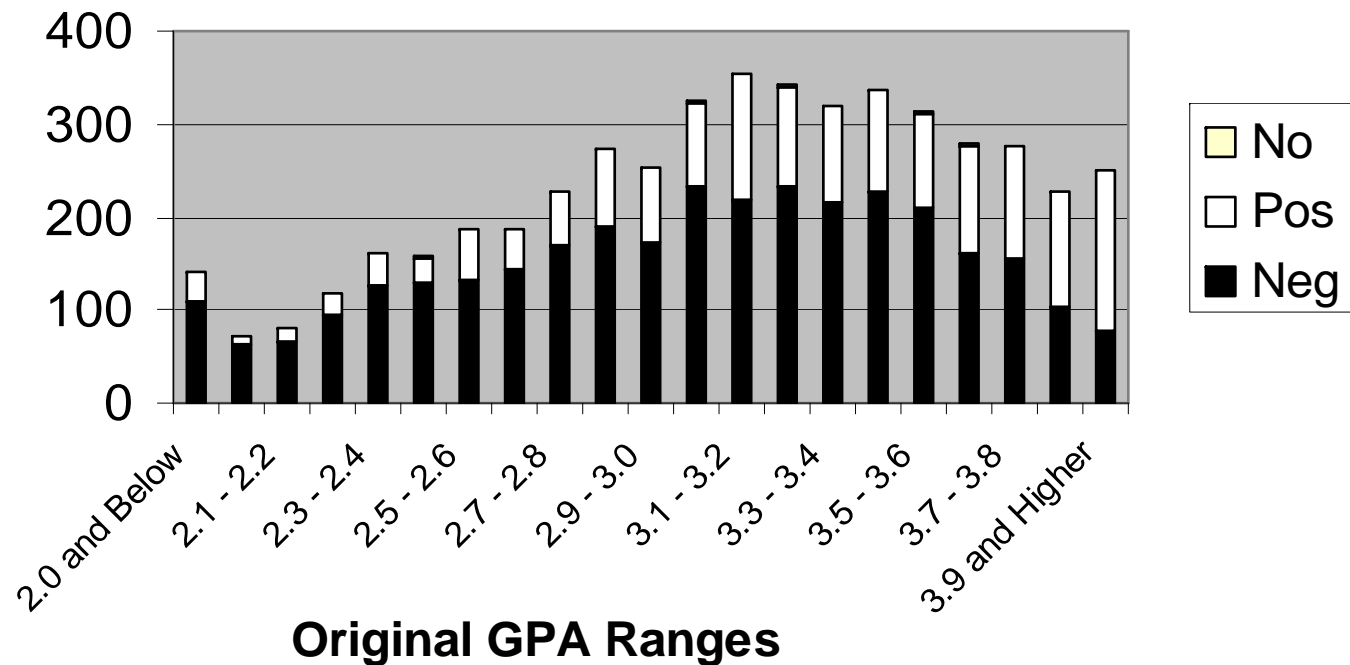
Original GPA Ranges



Fifth Semester Cumulative GPA Change

Impact of Spring 2004 Cumulative GPA Change Under Alternate New Policy

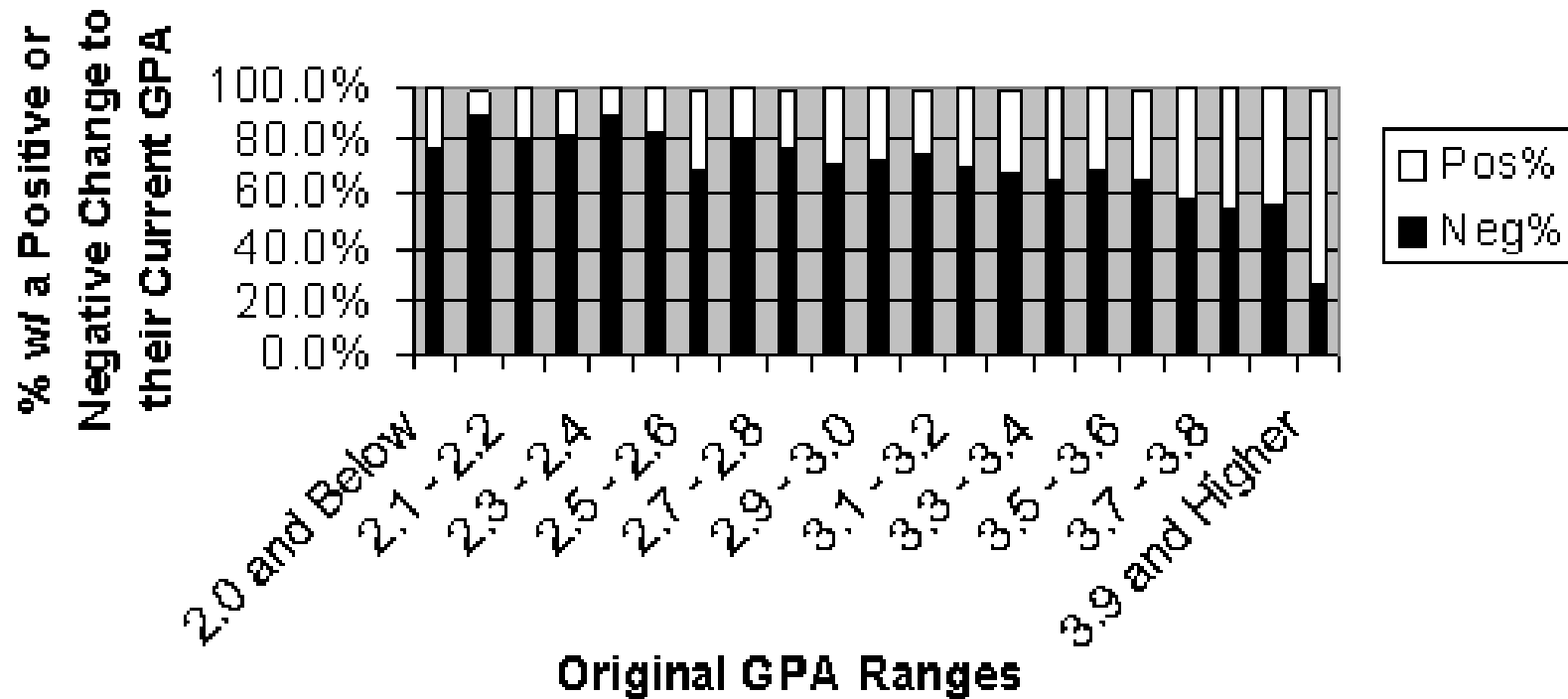
Number w/ a Positive or Negative Change to their Current GPA





Sixth Semester Cumulative GPA Change

Impact of Fall 2004 Cumulative GPA Change Under Alternate New Policy

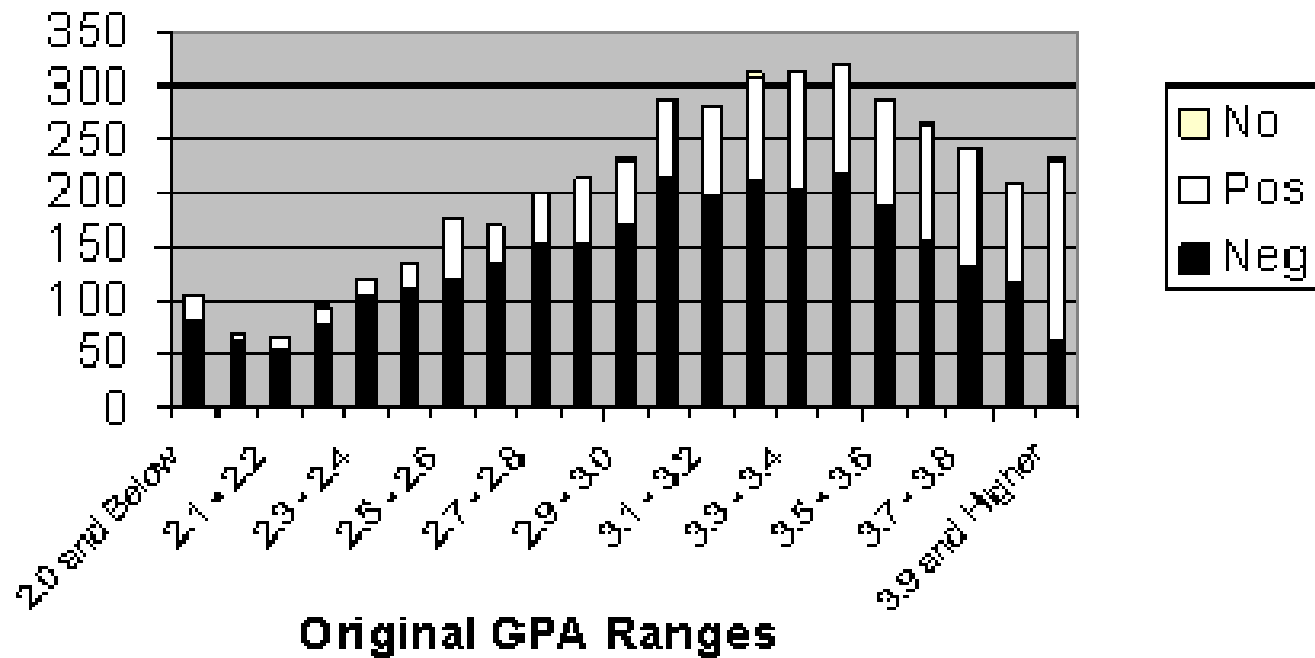




Sixth Semester Cumulative GPA Change

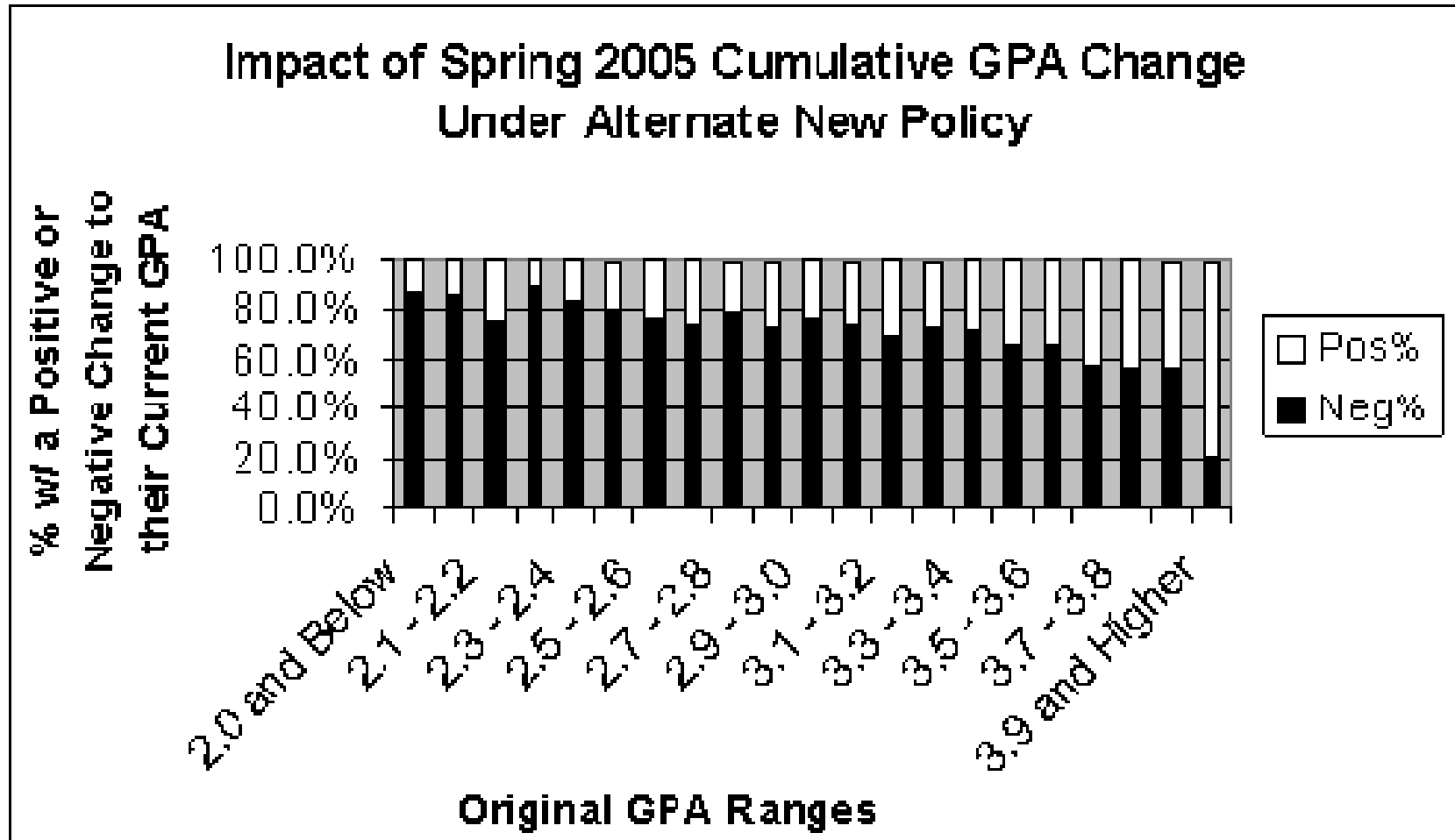
Impact of Fall 2004 Cumulative GPA Change Under Alternate New Policy

Number w/ a Positive or Negative Change to their Current GPA





Seventh Semester Cumulative GPA Change

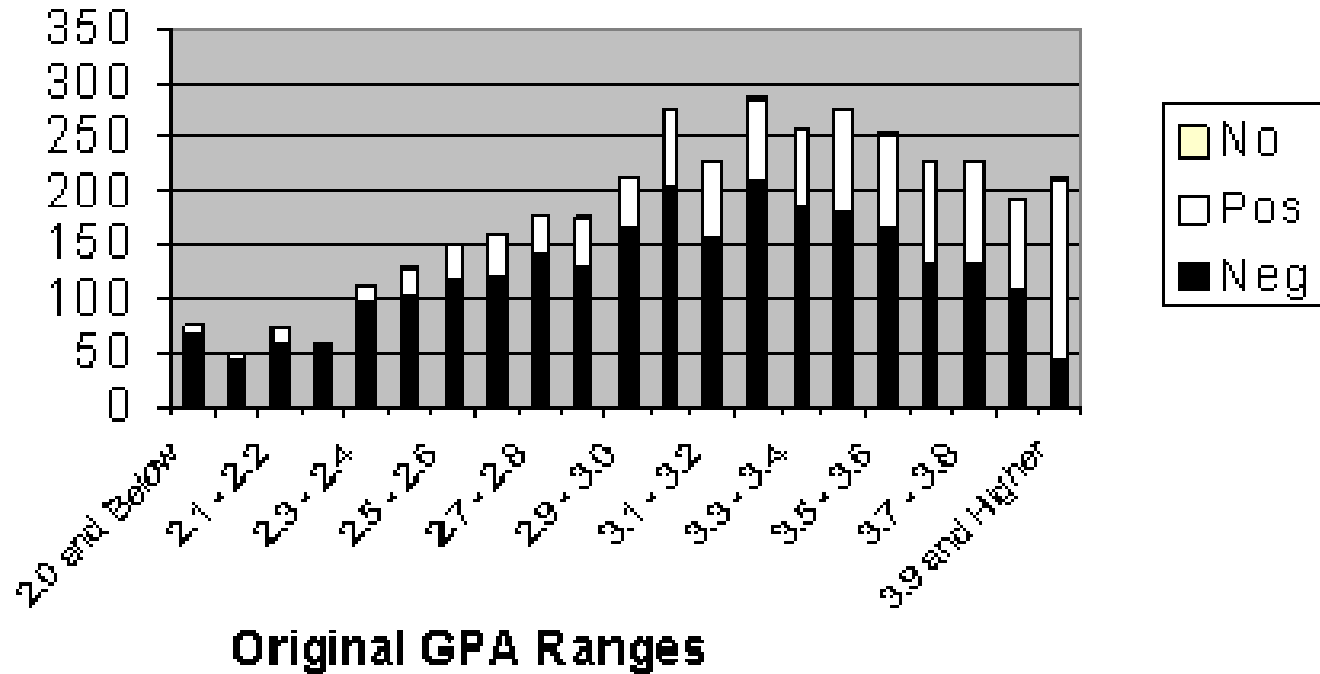




Seventh Semester Cumulative GPA Change

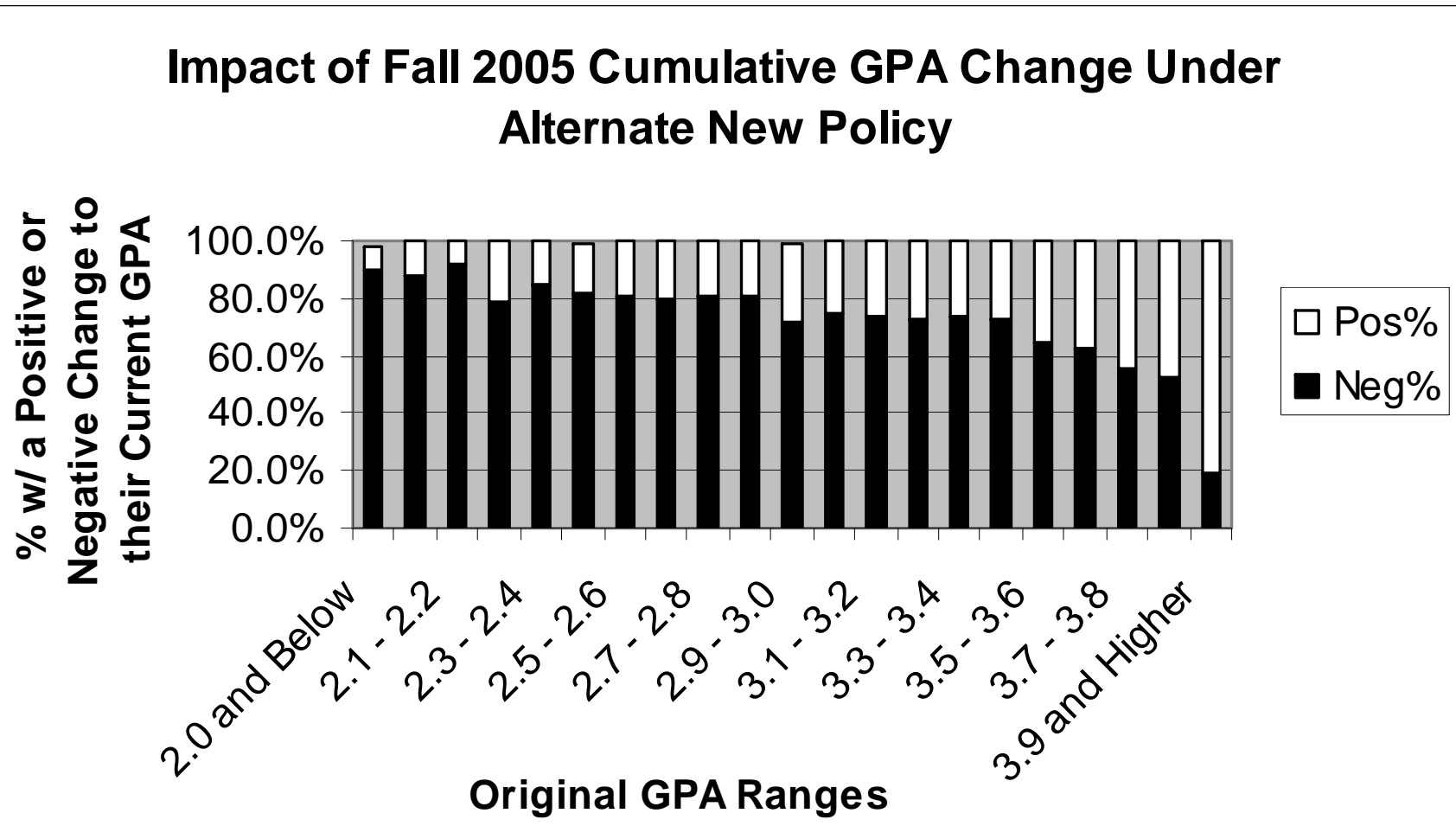
Impact of Spring 2005 Cumulative GPA Change Under Alternate New Policy

Number w/ a Positive or Negative Change to their Current GPA





Last Semester Cumulative GPA Change

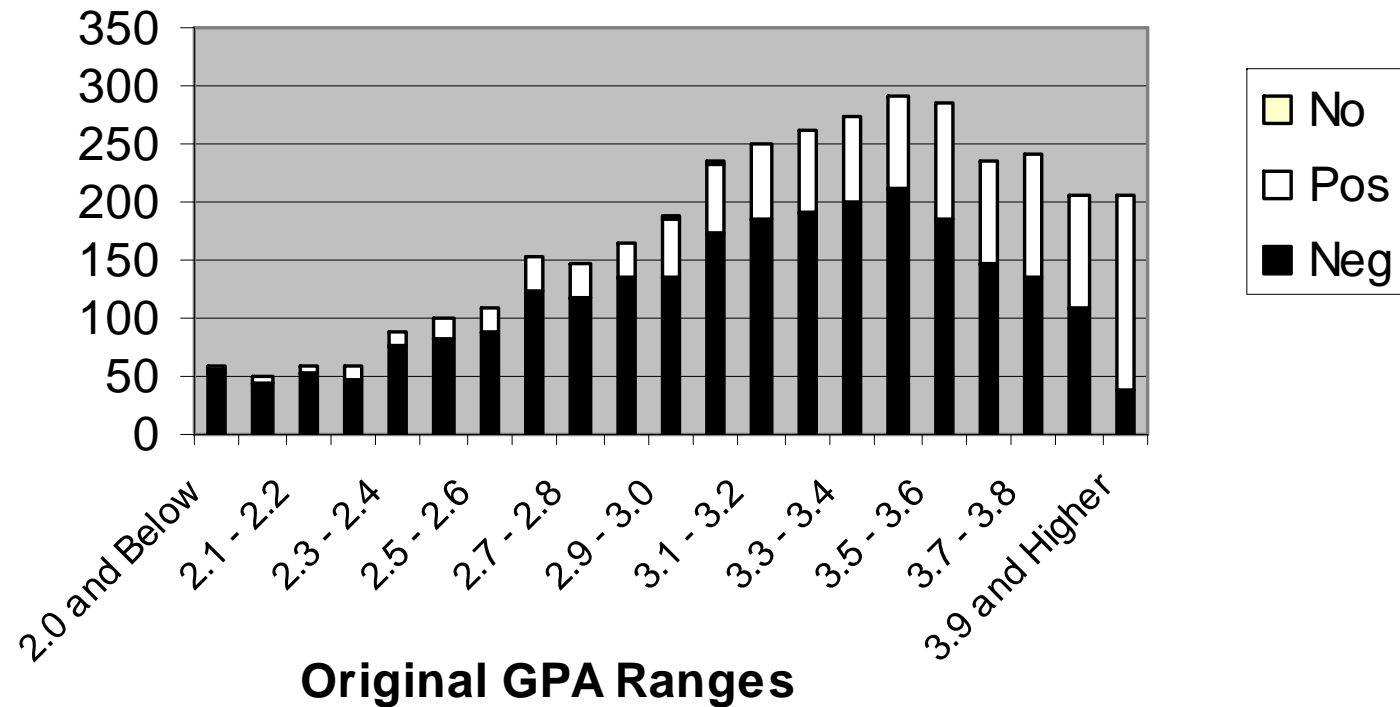




Last Semester Cumulative GPA Change

Impact of Fall 2005 Cumulative GPA Change Under Alternate New Policy

Number w/ a Positive or Negative Change to their Current GPA





Academic Actions

- Probations increased up to 45 per semester
- Dismissal increased 50 per semester
- Overall Graduation Rate dropped by 1-2%



Section Demand Increases from C-

College	Fall03				Spring 04				Fall 04				Spring 05			
	C-	# Crs	AVG Sec	Sec. Unit	C-	# Cour	AVG Sec	Sec. Unit	C-	# Cour	AVG Sec	Sec. Unit	C-	# Cour	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



Section Demand with C- and Waitlist

College	Fall03				Spring 04				Fall 04				Spring 05			
	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



Conclusion

- **In any given semester, there are many students both helped and hurt by the policy change when examining their semester GPA**
- **Over the long term, almost all cumulative GPAs are affected negatively**
- **Disciplinary actions would likely increase under the new policy**
- **Overall, there is a cumulative course repeat impact of about 100 Section Units each semester (depending on the size of the waitlists), which may have a financial impact**