"Colleges in Collusion: A Continuing Possibility"

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In 1989 the U.S. Justice Department investigated a small number of elite private colleges and universities into the way they set both tuition and financial aid awards and whether that process violated antitrust laws. A *Wall Street Journal* article published in May of that year alleged that Ivy League schools were "part of a price-fixing system that OPEC might envy" (Putka, 1989). Some of the schools then under investigation (the so-called "Ivy overlap group") are doctoral-level institutions (Brown, Columbia, Cornell, Dartmouth, Harvard, MIT, Tufts, the University of Pennsylvania, Princeton, and Yale); others (the so-called "Pentagonal/Sisters group") are not (Amherst, Barnard, Bowdoin, Bryn Mawr, Colby, Middlebury, Mount Holyoke, Smith, Trinity, Vassar, Wellesley, Wesleyan, and Williams).

For this group of twenty-three prestigious institutions, the average annual percentage increase in tuition and required fees has outpaced inflation in each of the last sixteen academic years ($p < .0001$ in a one-tailed *t*-test) and increased faster than 1.5 times the percentage change in the Consumer Price Index (from December to December) in all but two of the last sixteen years (the exceptions being 1996-97 and 1990-91, one year after the Justice Department's initial probe; $p < .0001$ in eleven of the sixteen years).

While tuition increases alone (even those substantially above inflation) do not constitute wrongdoing, the dispersion of tuition charges among these schools perhaps merits closer attention. (All tuition data, save for Middlebury College which reports only a "comprehensive fee," are from various issues of *The Chronicle of Higher Education*.) A common measure of relative dispersion is the coefficient of variation (CV). The CV is defined as the ratio of the sample standard deviation (s) to the sample mean ($\bar{x}$). If s and $\bar{x}$ change together (i.e., if tuition levels tend to rise at about the same rate), then the CV will be approximately constant. If schools act in concert to reduce s relative to $\bar{x}$, then the CV will fall. The following regression of CV's against a time trend (from 1980-81 through 1996-97) was estimated (*t*-values in parentheses):

$$CV = 3.708 - .00185\ YEAR \qquad (1)$$
$$(5.50) \quad (-5.44)$$

$$\bar{R}^2 = .642 \qquad F = 29.6$$

The declining scatter of CV's over the last seventeen years, however, shows two quite different patterns: From 1980-81 to 1989-90 (the year of the probe), the CV fell; since 1989-90, the CV has been remarkably stable. When the seven CV's since 1990 are regressed against time, there is no evidence of any discernible trend:

$$CV = -.145 + .000086\ YEAR \qquad (2)$$
$$(-.34) \quad (0.40)$$

$$\bar{R}^2 = 0.0 \qquad F = 0.16$$

Although many of the country's most selective and prestigious private colleges and universities have denied agreements to set tuition, these statistical findings are both curious and suggestive. Why, for example, has tuition stayed within such a narrow band *since* the Justice Department's first inquiry into possible antitrust violations? With public concern about price-fixing, institutions would exchange less information and price increases should be more independent. This might lead to an increase in dispersion rather than a decrease or no change in dispersion.

References

Putka, G. (1989). Colleges in collusion, *The Wall Street Journal*, May 2, p. B1.

The Chronicle of Higher Education, annual college tuition issue, 1981-1997.