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ANTITRUST AND HIGHER EDUCATION:  
WAS THERE A CONSPIRACY TO  
RESTRICT FINANCIAL AID?

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ABSTRACT

In 1991, the Antitrust Division sued MIT and the eight schools in the Ivy League under Section 1 of the Sherman Act for engaging in a conspiracy to fix the prices that students pay. The Antitrust Division claimed that the schools conspired on financial aid policies in an effort to reduce aid and raise their revenues. The schools justified their cooperative behavior by explaining that it enabled them to concentrate aid on only those in need and thereby helped the schools to achieve their goals of need-blind admission coupled with financial aid to all needy admittees.

This paper analyzes the empirical determinants of tuition and finds that the schools' agreement had no effect on average tuition paid. The paper also analyzes the appropriate application of the antitrust laws to not-for-profit institutions. The Court of Appeals found that it is appropriate for the courts to consider non-profit institutions' justifications for collective action (in this case, to enable the poor to attend school) under a Rule of Reason. The Court of Appeals overturned the District Court's opinion against MIT, citing the failure of the District Court to properly apply the Rule of Reason.

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**Antitrust and Higher Education:  
Was There A Conspiracy to Restrict Financial Aid?**

In 1991, the Antitrust Division sued MIT and the eight schools in the Ivy League under Section 1 of the Sherman Act for engaging in a conspiracy to fix the prices that students pay. The Antitrust Division claimed that the schools conspired on financial aid policies in an effort to reduce aid and raise their revenues. The schools justified their cooperative behavior by explaining that it enabled them to concentrate aid on only those in need and thereby helped the schools to achieve their goals of need-blind admission coupled with financial aid to all needy admittees. All of the Ivy League schools signed a consent decree agreeing to stop the challenged cooperative activity. MIT refused to sign and went to trial. The case received widespread news coverage and editorials supporting the schools' policy and MIT's decision to fight the Government appeared in several major newspapers including the N.Y. Times, L.A. Times, Washington Post, Boston Globe and the Philadelphia Inquirer.<sup>1</sup> In September of 1992, MIT was found guilty of price fixing.<sup>2</sup> Investigations against several schools outside of the Ivy League continued. Soon after the trial ended, Congress passed a law, the Higher Education Act of 1992, allowing the schools to engage in certain cooperative conduct aimed at concentrating aid on only needy students. In September of 1993, the Court of Appeals overturned the guilty verdict and ordered a new trial.<sup>3</sup> The Government subsequently dropped all investigations against other schools and reached a settlement with MIT that allows MIT to engage in most of the conduct that the Government challenged.

This paper analyzes the theoretical and empirical issues in the antitrust case. The case raised two substantive general issues, one empirical and one theoretical. First, what generally determines the price students pay and, specifically, what effect did the alleged conspiracy

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1. The Wall Street Journal did not support the schools.
  2. U.S. v. Brown University, et al., 805 F. Supp. 288 (E.D. Pa. 1992).
  3. U.S. v. Brown University, et al., 5 F.3d 658 (3rd Cir. 1993).

have on that price? Second, how can the conduct of non-profits be analyzed under the antitrust laws? In this paper we investigate both questions. After reviewing the background of the education sector, we perform a detailed empirical study of the determinants of the prices that students paid and show that there is no statistical support for the Government's claim that the schools successfully conspired to raise price in order to increase their revenues. We then discuss the application of the antitrust laws to non-profit institutions like schools.

This paper is organized as follows. Section I identifies the specific conduct that the Antitrust Division complained about. Section II discusses how non-profits generally behave and, in particular, how schools do. Section III uses this theoretical analysis to evaluate the Government's claim that Overlap raised the schools' revenues. Sections IV and V present a detailed investigation of the average price received by schools and shows that the alleged conspirators received no higher revenues as a result of the challenged conduct. Section VI analyzes the applicability of the antitrust laws to non-profit schools. Section VII presents conclusions.

### **Section I - The Challenged Conduct**

In the 1950's, members of the Ivy League met to discuss the desirability of not bidding for star athletes. These meetings were called "Overlap meetings" (the schools participating in the meetings will be called "Overlap schools"). Schools adopted the rule that no athlete could receive aid beyond that justified by financial need. The meetings soon took up the issue of whether such a rule was sensible for star students. The schools reasoned that if they were forced to bid for star students who had no financial need, the schools would have less money to give out to other students who had financial need. Prior to the 1950's, few schools had significant scholarship programs (Clotfelter (1991)), and the Ivies were accessible primarily to the wealthy. The purpose of the Overlap meetings, according to the participating schools,

was to concentrate scarce financial aid on only needy students to enable poorer students to attend.

A student's aid package consists of two components. One is called "self help" which represents what a student contributes based on loans or jobs that the school may provide or help the student get.<sup>4</sup> The other is grants (also known as scholarships) which are outright gifts to students. For most schools, grants and scholarships come primarily from either the Government (primarily through Pell Grants) or the institution itself. A student pays for his education from grants, self help, and "family contribution". The sum of the first two categories is the student's aid package. The sum of the last two categories is literally what the student pays to the school. See Figure 1. The Overlap schools reached agreement with each other on family contribution for commonly admitted students seeking financial aid, so that regardless of which Overlap school a student was admitted to, the student's family contribution was identical. (Notice that even if gross tuition levels differed among schools, the Overlap schools equalized family contribution.) Some Overlap schools reached agreement on the division of the aid package between self help and grants while others did not.

The number of schools participating in Overlap meetings grew over time. By the 1970's, there were regular meetings among the Ivies plus MIT and 14 other prestigious schools.<sup>5</sup> Table 1 lists the 23 schools.<sup>6</sup> The schools participating in Overlap meetings: a)

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4. There may often be a subsidy component to a loan that a student receives. We have not attempted to calculate either the subsidy or the part of the subsidy paid for by the school.
  5. The total undergraduate enrollment of all Overlap schools is about 60,000 which is less than one percent of total undergraduate enrollment and, for example, less than the combined undergraduate enrollments of the Universities of Illinois, Michigan, and Wisconsin. A valid inquiry is whether the Overlap schools could have market power in view of their small share of total enrollment. If the Overlap schools lacked market power, it would be hard to explain why the Overlap process existed.
  6. The Ivies plus MIT met in one room. The other schools together with designated schools from the Ivies plus MIT met in another.

**Figure 1**

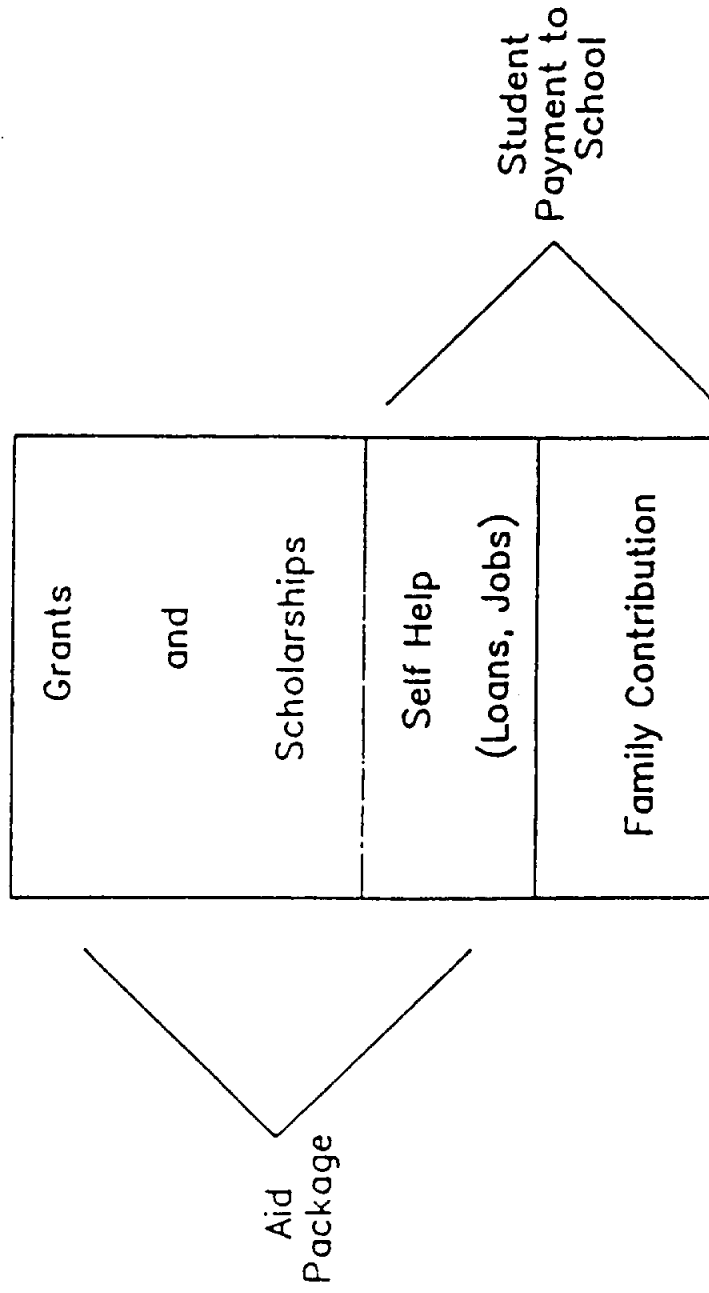


Table 1  
Overlap Participants

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AMHERST COLLEGE  
BARNARD COLLEGE  
BONDJOIN COLLEGE  
BROWN UNIVERSITY  
BRYN MAWR COLLEGE  
COLBY COLLEGE  
COLUMBIA COLLEGE  
CORNELL UNIVERSITY  
DARTMOUTH COLLEGE  
HARVARD UNIVERSITY  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
MIDDLEBURY COLLEGE  
MOUNT HOLYOKE COLLEGE  
PRINCETON UNIVERSITY  
SMITH COLLEGE  
TRINITY COLLEGE  
TUFTS UNIVERSITY  
UNIVERSITY OF PENNSYLVANIA  
VASSAR COLLEGE  
WELLESLEY COLLEGE  
WESLEYAN UNIVERSITY  
WILLIAMS COLLEGE  
YALE UNIVERSITY

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agreed to give aid based only on need; b) agreed on a common methodology to define need; and c) met to discuss individual cases of commonly admitted students. (We refer to this conduct as "Overlap conduct".)

At the Overlap meetings, a computer printout of commonly admitted students was circulated among the schools together with each school's proposed family contributions. In cases of significantly differing proposals (ones that differed by more than several hundred dollars), the schools would discuss their justification for the family contributions and would agree to compromise on a common figure or (less often) agree to disagree. There were disagreements on about 10 to 20 percent of the commonly admitted students applying for financial aid.<sup>7</sup> The initial disagreements usually arose either because schools had different information (e.g., if an applicant had an older sibling at a school, one school could have more complete information than another about family finances) or the schools had varying degrees of sophistication in analyzing complicated financial holdings (e.g., the treatment of a low reported income that took advantage of various tax shelters).

The Overlap schools justified their policies on the grounds of conserving aid for only the truly needy and claimed that the Overlap conduct helped them achieve their goal of need-blind admissions with a guarantee of full aid if admitted. Although there are no readily available surveys, it appears that there are few schools outside of Overlap that are committed to need-blind admissions plus full aid to all needy admittees. The schools believed that their policies were entirely consistent with the Government's financial aid policy. With minor exceptions, federal money can be given only to needy students. A meritorious high-income student generally cannot receive any federal money. Moreover, students receiving any federal money cannot usually receive supplemental institutional awards beyond demonstrated

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7. Dodge (1989).



financial need.

The Government claimed that the Overlap schools were engaged in "garden variety price fixing".<sup>8</sup> The purpose of the price fix was to agree on the number and amount of "discounts" from list price (tuition) that the schools would offer. By limiting the "discounts" the schools could succeed in raising their revenues. There was no allegation that the Overlap conduct had reduced enrollments.<sup>9</sup> According to the Government, the effect of Overlap was to raise both the price paid by high-income meritorious students and the average price paid by all students. The Government asked that the behavior be condemned under the per se rule against price-fixing conspiracies.<sup>10</sup>

## Section II - Non-Profits and Schools

The Government's case alleged a classic price-fixing conspiracy and took no notice that the schools are non-profit. In this section we show that the non-profit nature of higher education is critical to understanding the behavior of the schools.

Most higher education in the United States is provided by non-profit making institutions. These institutions are either public, such as state universities, or private non-profit schools. If they are non-profit, they are typically organized under IRS Regulation 501 (c)3. This regulation legally constrains the actions of a non-profit, specifically preventing the disbursement of any excess revenues over costs. Private donations made to the school can be deducted from the donor's income tax. In this way, both the donor and the general public

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8. See Dist. Ct. Trial Transcript at 725.

9. We examined undergraduate enrollments over the period 1984-90 and found that enrollment growth at the Overlap and non-Overlap private schools was similar.

10. The Government did not allege a tuition conspiracy, though it presented evidence of discussions regarding tuition. The Government did not challenge the Overlap conduct aimed at eliminating bidding for star athletes.

support private schools. The Overlap schools, as well as many other private schools, rely heavily on outside financial support. For example, at MIT student charges cover only about one-half of the full cost of educating a student.<sup>11</sup>

Unlike the typical profit-maximizing firm, the non-profit firm has an objective function that is difficult to specify precisely. In the case of colleges and universities, the various attributes of the multi-dimensional objective function would include:

- a) provision of a quality undergraduate and graduate education;
- b) general welfare of students;
- c) general welfare of faculty and administrators;
- d) high quality research;
- e) innovative teaching and research programs; and
- f) satisfaction of donors' preferences.

There are two features that flow from the non-profit nature of schools. First, because of the complicated nature of the objective function, it is difficult to determine empirically whether an allocation of students to schools is efficient especially since the preferences of donors, students and faculty all matter.<sup>12</sup> Second, schools erect many barriers to trade that would be inefficient in a profit-maximizing context.<sup>13</sup> For example, the Overlap schools and others do not allow students to buy admission (or at least there is no formal procedure for doing so) if they have poor grades. A school does not allow its admittees to trade their places

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11. Source: Testimony of Paul Gray.

12. Such objective functions are unusual in economics. Becker's (1991) analysis of models of the family in which the objective function depends on the preferences of others is a notable exception.

13. There are many other actions of schools that would be hard to explain in a profit-maximizing context. For example, schools typically do not charge differentially for courses even though some courses are more costly to provide than others. See Rothschild and White (1991).

with those who have gotten in elsewhere. Even though schools are concerned with quality and their reputation, we would expect that in a profit-maximizing model schools would find it profitable to recognize some tradeoff between quality and price for at least some price. We suspect that Harvard and MIT as well as many other schools could abandon need-blind admissions and profitably auction off their last five admission spots without a material decline in either their reputation or quality of the student body but with a significant increase in revenue.<sup>14</sup> Unlike a market outcome, there is absolutely no attempt to equate ratios of willingness to pay to ratios of marginal rates of substitution. Since economists know that constraints on trading are generally undesirable, the behavior of schools can be reconciled with reasonable behavior only because of the complicated nature of each school's non-profit objective function.

### **Section III - Theoretical Analysis of Overlap**

The Government charged that the Overlap schools colluded to raise price paid by agreeing on the "discount" to offer needy students. The Government argued that the inevitable consequence of the collective behavior of the Overlap schools was to raise price and the schools' revenues. Indeed, the Government argued that even in the absence of evidence that average price actually rose, the consequences of the school's actions were so inevitable that the conduct should be condemned as a per se violation of the antitrust laws.<sup>15</sup>

The Government's argument about the inevitability of average price increases is wrong as a matter of theory. Even if the Government's argument were generally true for profit-maximizing firms, it is certainly not true for non-profit firms. Since non-profit firms maximize a

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14. It is undoubtedly true that many schools do show preference to alumni and large donors and this is a rough way of "selling" admission. MIT gives applicants of alumni and donors no preference.
  15. See, e.g., Government's Complaint. See also letter from the Department of Justice to MIT, November 5, 1993.

multi-attribute objective function, it is simply not possible to predict inevitable consequences from cooperative price setting. As a matter of theory, the cooperative efforts of the Overlap schools could indeed be to conserve their financial aid (in a revenue-neutral way) so as to achieve their stated goal of enabling greater numbers of poor to attend their schools. There is absolutely nothing illogical about such behavior.

We recognize that non-profits may sometimes have an incentive to collude to diminish competition and thereby raise more revenues that can be spent on either desirable or undesirable causes. Our point is that in the non-profit setting of schools, the schools face conflicting goals if they attempt to raise revenues by increasing the price paid by students. On the one hand, the increase in revenues could be used to help achieve many of a school's goals. On the other, an increase in average price paid harms the welfare of students, one of the groups that matter to a school, as well as some donors who want to keep tuition low. Therefore, there is no way to predict, as a matter of theory, whether schools would find it in their interest to raise average prices to students even if it would be profitable to do so.<sup>16</sup> The only way to resolve whether the Overlap conduct raised price is to examine the evidence. Theory alone cannot answer whether the Government or MIT is correct about the effect of the Overlap conduct.

There are several facts that suggest skepticism regarding the Government's claim that Overlap conduct was a "garden variety price fixing" scheme to raise school revenues. First, why spend so much effort colluding on poor students? If the Overlap schools were serious about colluding to raise revenues, they should collude on the price charged to the rich students. After all, that is where the money is. (The Government never charged the schools

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16. The administration may even have preferences over how revenues are spent depending on their source. For example, a \$100 gift may be spent differently than a \$100 increase in tuition revenues.

with collusion on price to non-aided students.) Moreover, if the schools wanted to maximize revenue, they should collude to price discriminate and charge students from high-income families (those not currently receiving aid) a price that depends on their family income. Second, why did the Overlap schools have need-blind admission? It is patently inconsistent with profit maximization. Third, why not auction off at least a few places to raise revenues? The failure to do so is a lost profit opportunity. Finally, the likelihood of successful collusion is low in an industry whose product dimensions are as heterogeneous as higher education.<sup>17</sup> Although these facts raise skepticism about the Government's theory, they cannot as a logical matter rule out that average prices rose as a result of Overlap.<sup>18</sup>

#### Section IV - Empirical Analysis of Overlap

The schools claim that the Overlap process allowed them to concentrate their scarce financial resources on needy students while leaving their total revenues unchanged. The Government claims that the Overlap conduct was a way to limit the amount of discounting off of list price and thereby raised the schools' revenues. No one claims that enrollment was affected by the Overlap conduct. Under the Government's theory, the average price paid per student should be higher with the Overlap conduct than without, and hence Overlap increased the schools' revenues. Under the schools' theory, the average price paid per student should be unaffected by the Overlap conduct.<sup>19</sup>

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17. See also Masten (1992).

18. A referee has correctly pointed out that one can list certain behavioral anomalies even for profit-maximizing firms, such as the failure of many theaters to use peak-load pricing. Our view is that behavior inconsistent with profit maximization, though not definitive, at least raises doubts about claims that the schools colluded.

19. These empirical predictions also incorporate the possibility that Overlap schools engaged in a tuition fix. If the schools did fix tuition, then the average price paid per student should be higher at Overlap schools. Although the complaint did not allege a  
(continued...)

There are two difficulties in testing empirically whether the evidence supports the Government's or the schools' claim. First, the best test would be a before-and-after test. However, Overlap meetings have been occurring for over 30 years. It is difficult to obtain information prior to the start of the Overlap meetings and, even if available, such information would not be terribly informative because financial aid was much less important then. Moreover, Overlap meetings ceased as of the 1991-1992 academic year, so there are only two years of post-Overlap data -- data that would have reflected the presence of the lawsuit. Second, a comparison of the average prices paid at Overlap and non-Overlap schools would fail to isolate the effect of Overlap unless one could adjust for the many features that distinguish Overlap schools from non-Overlap schools. The Overlap schools are among the most highly selective and best endowed of all schools.

To overcome these two difficulties, we constructed a regression model of average price paid per student. The sample of schools used in the regression analysis was based on classifications established by the Carnegie Foundation for the Advancement of Teaching. Every several years, the Carnegie Foundation classifies schools into a variety of categories based on the school's objective characteristics such as research budget and number of degrees granted (subjective evaluations such as reputation are not used). We found that five different 1987 Carnegie classifications encompassed the 23 Overlap schools. We then attempted to gather annual information on all schools in those five Carnegie classifications. We succeeded in obtaining annual information for the period 1984-1990 for about 225 private and public schools.

The dependent variable,  $p_{it}$ , is real average price paid per student for school  $i$  in year  $t$ .

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19.(...continued)

fix on tuition, the Government produced evidence of information exchanges among schools and presumably the purpose of presenting the evidence was to imply something sinister about the information exchanges.

Real average price per student equals gross tuition plus room and board plus mandatory fees minus the average institutionally administered grant per student.<sup>20</sup> We deflate  $p_r$  and all other financial data by the all-items CPI.

The variables that we used to explain  $p_r$  are reported in Table 2. These variables are designed to characterize the exogenous influences on the setting of average price.<sup>21</sup> The first two variables reflect whether the school participates in Overlap meetings and, if so, whether it is a member of the Ivy plus MIT schools. The next five categories represent the classifications that the Carnegie Foundation uses to group schools. Research I universities are those that received over 50 million dollars of research grants and granted over 50 doctorates. Research II universities are those that received 35-50 million dollars of research grants and granted over 50 doctorates. Doctoral I universities are those that granted over 50 doctorates in a broad variety of fields. Doctoral II schools are those that granted 35-50 doctorates. Liberal Arts I schools are selective undergraduate schools.

Three variables measure a school's quality. PCTACC measures the percentage of applicants who are admitted. SAT measures the percentage scoring well on the SAT exams,

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20. Institutionally administered grants consist of a school's own money and some federal aid, specifically SEOG grants. The total amount of SEOG grants at a school is typically small (about \$50 per undergraduate) and, based on a separate analysis, does not systematically differ between the Overlap and non-Overlap schools.

For some schools, the total amount of aid distributed by the school was not reported for some years. In these cases, we impute the missing information from data for different years from the same school. For example, if a non-Overlap school reports incomplete merit aid data for one year (e.g., the number of merit aid recipients is not reported but the average value of merit aid awards is reported), we impute the total merit aid awarded by the school in that year by multiplying the total amount of need-based aid awarded that year by the maximum ratio of merit aid to need aid calculated from other years of data for that school. The results are not sensitive to variations in the imputation method used.

21. We return later to a discussion of exogeneity and the tests we performed that show that the possible endogeneity of some variables does not affect our conclusions.

Table 2

Characteristics Used to Explain Average Real Price

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Ivy-plus-MIT Overlap Member	(IVY)
Other Overlap Member	(NONIVY)
Carnegie Classification Liberal Arts 1	
Carnegie Classification Doctoral 1	(DOCTOR1)
Carnegie Classification Doctoral 2	(DOCTOR2)
Carnegie Classification Research 1	(RSRCH1)
Carnegie Classification Research 2	(RSRCH2)
Percent of Students Accepted	(PCTACC)
Percent of Students Scoring more than 700 on SAT Verbal or Math	(SAT)
Percent of Class Completing Degree	(COMPDEG)
Real Endowment per Fulltime Equivalent Student	(ENDOW)
Percent of Students not Receiving Need- Based Aid	(PCTNOAID)
Real State per Capita Disposable Income	(YDPC)
Religious Affiliation	(NONRELIG)
Public Affiliation	(PUBLIC)
Mandatory Fee Information Missing	(FEEMISS)

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Sources: Source for all variables except Carnegie Classifications, State per Capita Disposable Income, and Endowment per Student is Peterson's Annual Survey of Undergraduate Institutions. Carnegie Classifications are from the Carnegie Foundation for the Advancement of Teaching. State per Capita income is from the Statistical Abstract of the United States. Endowment is from Higher Education General Information Survey. Fulltime equivalent students was provided by Michael McPherson.



while COMPDEG represents the percentage of the class that graduates.

The financial status of a school will obviously influence its ability to give aid. A school's ability to give aid could depend on its real endowment per student (ENDOW), the wealth of its student body (measured roughly by WEALTH - the percentage who do not receive need-based grants) and income (crudely measured by real state per capita disposable income YDPC). The different costs of schools are also (roughly) proxied by YDPC.

Schools that have religious affiliations could have different abilities to grant aid and we control for those characteristics. Finally, for some schools, the data on mandatory fees (which varies roughly between \$0 and about \$500) is missing and we create a dummy variable that equals one when the information is missing.

In Table 3, we present some selected data for the 23 Overlap schools and the non-Overlap schools. Table 4 presents the data summary for all schools. The basic model that we estimate is

$$p_{it} = x_{it}\beta_t + \epsilon_{it} \quad (1)$$

We estimate this model annually for each year for which adequate data exist on the Ivy schools plus MIT. Those results are presented in Table 5 for a sample of about 160 private schools.

The annual regressions produce sensible results. The variables WEALTH, YDPC, and NONRELIG are almost always individually statistically significant and of the correct sign in each year for which an annual regression can be run. One of the variables, PCTACC or COMPDEG, which each measure quality, is statistically significant in each year. The sensible implication of the results is that high-quality schools charge more. Non-religiously affiliated institutions charge about \$1500 more than religiously affiliated ones. In no regression are the coefficients related to Overlap positive and statistically significant for either the Ivy schools plus MIT or the non-Ivy Overlap schools. We reestimated (1) on a sample including public

Table 3  
Averages of Selected Variables

School	Percent of Applicants Accepted	Percent Scoring > 700 on SAT Verbal or Math (0-200)	Percent of Students Not Receiving Need-Based Grants	Endowment Per FTE Student (000's \$1990)
OVERLAP SCHOOLS				
Amherst College	22.3	59.0	64.1	116
Barnard College	48.5	16.4	62.2	21
Bowdoin College	74.0	32.0	60.8	90
Brown University	20.7	55.0	67.8	44
Bryn Mawr University	56.5	39.0	57.1	55
Cotby College	43.3	8.7	65.5	37
Columbia College	30.2	49.5	55.5	82
Harvard University	16.1	87.0	59.8	216
Massachusetts Institute of Technology	31.2	104.3	49.7	94
Mount Holyoke College	53.5	10.3	51.2	59
Princeton University	17.5	82.4	60.2	264
Smith College	55.2	13.0	41.8	108
Trinity College	44.7	14.7	64.2	55
Tufts University	33.2	27.2	70.7	14
University of Pennsylvania	37.4	50.0	62.6	26
Vassar College	44.7	24.2	55.7	87
Wellesley College	47.9	24.8	60.0	118
Wesleyan University	35.2	49.5	62.4	82
Williams College	26.8	67.0	67.8	116
Yale University	19.2	83.2	64.7	165
All Other Schools	67.6	13.5	53.4	32

Based on data for 162 private schools

Table 4  
Averages of Variables  
(1990 dollars)

Variable	Label	Mean	Standard Deviation
AVNET1	Average Net Revenue	\$12,366.22	2,420.08
IVY	Ivy League + MIT	0.04	0.20
NONIVY	Non-Ivy Overlap School	0.08	0.27
RSRCH1	Carnegie Class: Research 1	0.12	0.33
RSRCH2	Carnegie Class: Research 2	0.05	0.22
DOCTOR1	Carnegie Class: Doctoral 1	0.04	0.20
DOCTOR2	Carnegie Class: Doctoral 2	0.09	0.28
FEEMISS	Mandatory Fee Information Missing	0.22	0.30
PCTACC	Percent of Applicants Accepted	63.64	19.11
SAT	Pct Scoring > 700 on SAT Verbal or Math	17.33	20.22
COMPDEG	Percent of Class Completing Degree	71.20	11.62
PCTNOAID	Percent Not Receiving Need-Based Aid	54.21	13.77
YDPC	State Per Capita Income	15,578.71	1,917.14
ENDOW	Endowment Per FTE Student (000's \$1990)	39.18	43.88
NONRELIG	Not Religiously Affiliated	0.62	0.48

Based on data for 162 private institutions.

Table 5  
Annual Regression Results  
Average Price Paid Per Student

	1984	1985	1986	1987	1988	1990
INTERCEP	508.53 (2316.78)	-3876.51 (2455.08)	858.42 (2496.03)	7005.38 (2441.15)	6570.26 (2778.15)	4677.99 (4988.34)
IVY	271.84 (714.52)	21.92 (788.16)	4.14 (762.04)	16.87 (882.56)	-918.81 (1079.05)	-2.22 (1681.46)
NOMIVY	120.53 (468.39)	172.84 (529.46)	173.84 (517.53)	688.30 (658.66)	161.56 (1092.78)	422.67 (1429.37)
RSRCH1	540.47 (425.93)	662.24 (488.95)	836.01 (500.49)	1645.95 (577.00)	1570.87 (612.70)	1429.37 (1226.22)
RSRCH2	887.51 (560.62)	494.44 (563.76)	588.31 (559.73)	1851.54 (628.08)	1741.35 (777.44)	2222.69 (1138.64)
DOCTOR1	310.30 (648.88)	671.42 (589.09)	644.06 (614.76)	990.01 (742.40)	693.86 (740.03)	799.27 (1475.37)
DOCTOR2	-1158.73 (476.61)	-1114.00 (547.68)	-821.42 (574.24)	192.62 (654.05)	-1529.95 (673.40)	-640.36 (1386.09)
FEEMISS	-663.11 (260.21)	-662.24 (301.53)	-661.45 (319.03)	462.72 (347.11)	-686.51 (392.89)	-915.57 (653.49)
PCTACC	-8.43 (12.02)	5.68 (12.28)	-12.82 (11.69)	-47.43 (11.89)	-57.57 (14.08)	-60.52 (25.63)
SAT	6.16 (11.13)	12.92 (12.57)	13.75 (11.82)	-24.03 (16.19)	-1.10 (14.37)	-20.58 (23.66)
COMPDEG	57.21 (15.65)	65.85 (17.17)	43.29 (15.73)	11.01 (16.84)	27.64 (20.00)	63.68 (37.29)
PCTNOAID	37.74 (8.79)	55.84 (8.53)	60.28 (10.16)	34.90 (9.54)	33.12 (11.98)	10.55 (19.21)
YDPC	.30 (.08)	.45 (.08)	.32 (.08)	.31 (.08)	.36 (.08)	.45 (.15)
ENDOW	-.05 (4.49)	-3.67 (5.33)	-6.92 (4.61)	-.50 (4.63)	-8.16 (4.70)	-7.81 (6.47)
NONRELIG	1273.20 (267.93)	1297.16 (296.34)	1663.39 (288.40)	1539.35 (319.44)	1396.92 (339.91)	906.22 (593.28)
√MSE	1214.21	1401.76	1380.52	1378.09	1516.54	1804.86
R <sup>2</sup>	0.71	0.70	0.72	0.73	0.76	0.74
N	130	137	136	106	105	53

Notes: Standard error in parentheses beneath each coefficient. No Ivy-Overlap schools reported complete data for 1988.

schools which yields about 225 schools. The conclusions are unchanged. The effect of being a public school is to lower average price by about \$8400, which is statistically significant.

It is possible to reestimate (1) by imposing the condition of structural stability on  $\beta_t$  so that  $\beta_t = \beta_{t^*}$  for all  $t, t^*$ . One can then estimate a stacked regression once the correlation structure of the errors is specified. It seems reasonable to expect that  $\text{Cov}(\epsilon_{it}, \epsilon_{jt^*}) = 0$  for  $i \neq j$ ,  $t \neq t^*$ , and perhaps to include a time dummy for each year. The  $x_{it}$  variables change slowly for any school  $i$  so that in fact any stacked regression is really basing its estimation on variations in the  $x_i$  variables across schools. Therefore, a reasonable way to proceed is to first estimate a model based on school averages. (We estimate stacked regressions later.)

We first average the observations of school  $i$  over the years 1984-1990 for which available data exist. The average model is

$$p_i = \sum_t d_{it} p_{it} = \left( \sum_t d_{it} x_{it} \right) \beta + \sum_t d_{it} \epsilon_{it}, \quad (2)$$

where  $d_{it} = 1/N_i$  and  $N_i$  is the number of years for which information is available on school  $i$ , provided data exists in year  $t$  for school  $i$ .

The variance-covariance structure of the errors in (2) is assumed to be diagonal but heteroskedastic. Table 6 reports the results of estimating (2) on the sample of private schools and reports GLS standard errors beneath each coefficient.<sup>22</sup>

The results in Table 6 are similar to the annual ones.<sup>23</sup> There is no statistically

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22. The point estimates come from a regression weighted by  $\sqrt{N_i}$ . We also calculated White-consistent standard errors for each coefficient. The White-consistent standard errors are similar to the GLS standard errors and leave the major results unchanged.

23. Estimation of (2) with separate year dummies (which turn out to be collectively statistically insignificant) leaves the major results unchanged.

Table 6

Weighted Average Regression Result, 1984-90  
Dependent Variable: Net Tuition and Fees

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INTERCEP	2299.47 (2429.07)
IVY	-322.42 (678.72)
NONIVY	130.37 (463.81)
RSRCH1	1042.21 (435.09)
RSRCH2	1062.57 (514.05)
DOCTOR1	545.66 (551.02)
DOCTOR2	-1143.27 (493.21)
FEEMISS	-540.82 (294.78)
PCTACC	-27.89 (11.97)
PCTNOAID	43.58 (9.44)
SAT	2.31 (11.16)
YDPC	0.36 (0.07)
COMPDEG	45.68 (16.64)
NONRELIG	1343.18 (250.19)
ENDOW	-5.95 (3.77)
Number of Observations	162

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Note: Standard error in parentheses beneath each coefficient.

significant evidence that the Overlap conduct raised revenues or, equivalently, average price.<sup>24</sup> If anything, the results indicate that Overlap schools charged lower average prices, though the results are not statistically significant. Figures 2 and 3 illustrate the lack of statistical significance of the Ivy-Overlap effect based on results from (2). Figure 2 uses (2) to predict the average price at each of the Ivy schools plus MIT. As Figure 2 illustrates, the model does a good job of predicting actual average price and overestimates for four of the schools and underestimates for the remaining three.<sup>25</sup> On average, the model predicts the actual average price almost exactly. Figure 3 presents the residuals from each of the private schools. The seven residuals for the Ivies plus MIT are circles and are on the far right of the diagram.<sup>26</sup> The seven residuals are relatively small and are on average close to zero.

The results also indicate that although the Overlap process did not affect average price, there are many sensible and statistically significant influences on average price. For example, the quality of a school as measured by percent accepted is positive and statistically significant. Although this is a sensible result, it implies a quality premium that is on the order of only 25 percent of average price. For example, all else equal, a school that is highly selective (PCTACC equals 25 percent, COMPDEG equals 80 percent) charges only roughly \$3000 more on average than one that is not (PCTACC equal 75 percent, COMPDEG equals 40 percent). The James et al. (1989) study shows that there is a differential return to education depending on the quality of the school, after adjusting for a student's characteristics. They find that students graduating from "elite" schools earned about 3-5 percent more than they would have if they had attended other schools. Although the "elite" schools in

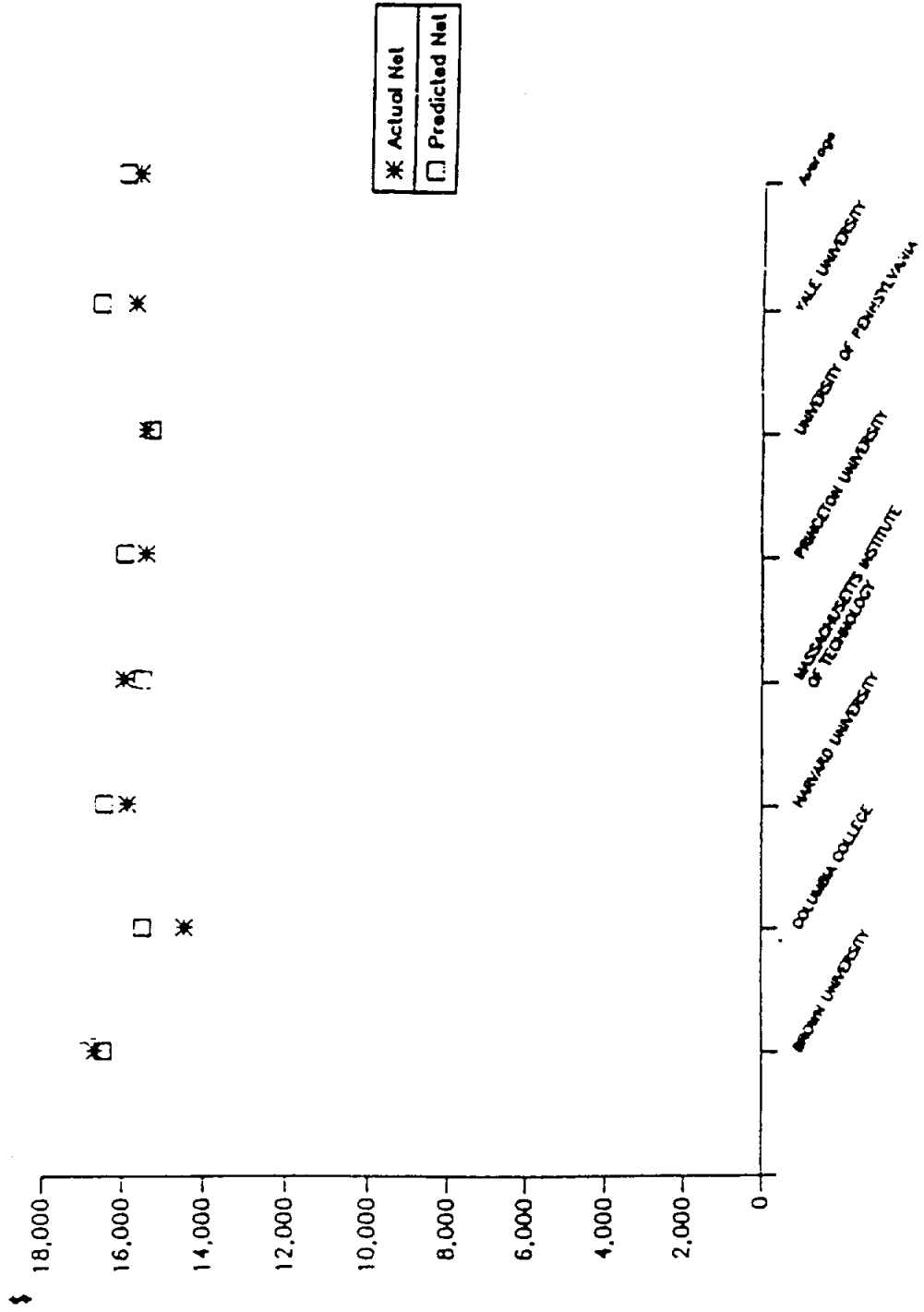
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24. We reached a similar conclusion regarding gross tuition plus room and board plus fees. The coefficient of Overlap was negative and relatively small (-\$376) in addition to being statistically insignificant.

25. Data on Dartmouth and Cornell are unavailable.

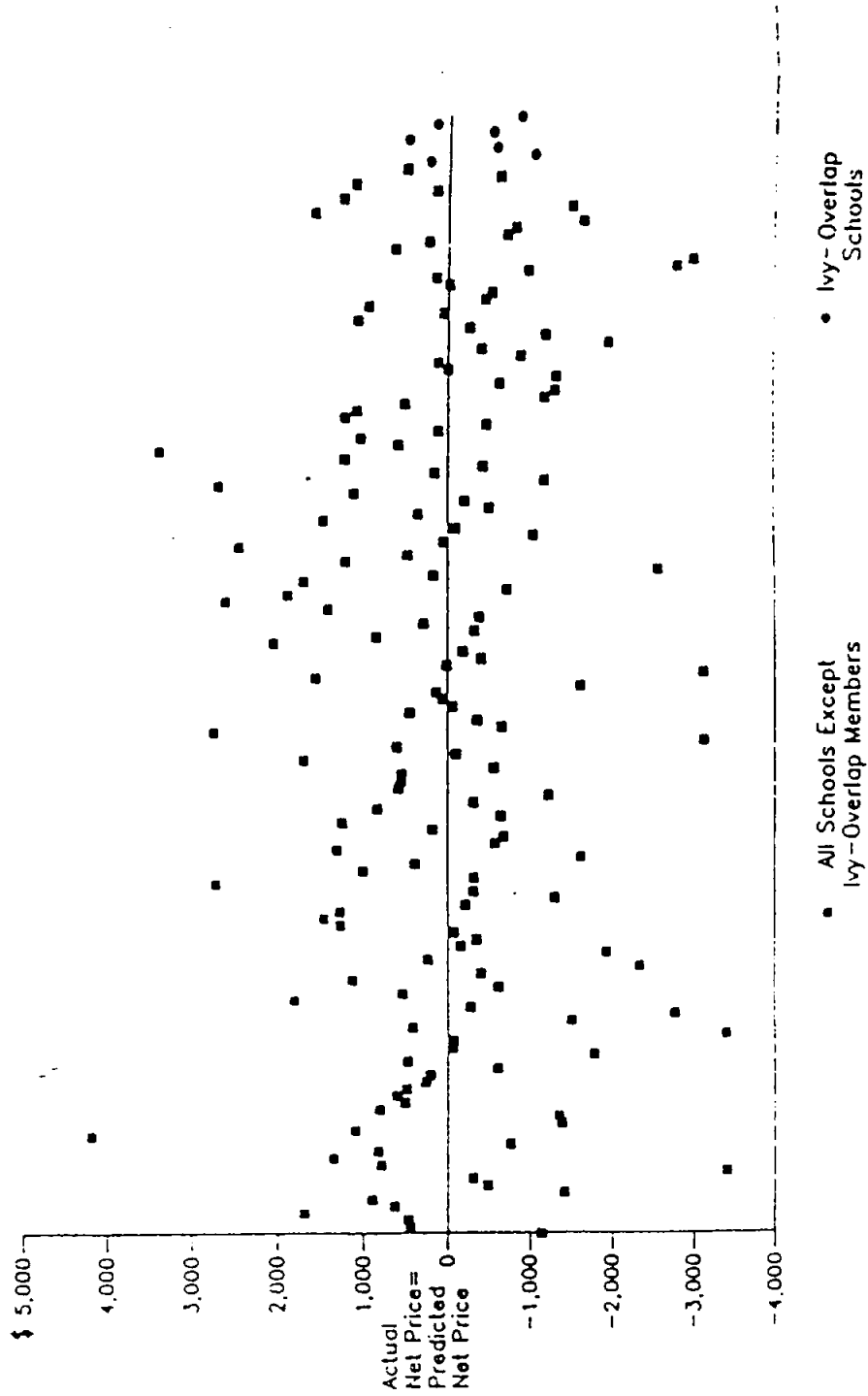
26. For the Ivies plus MIT, we plot the residual plus the Ivy Overlap dummy.

FIGURE 2  
**Actual Net Undergraduate Price For Overlap Schools  
 Compared to Regression Prediction**





**FIGURE 3**  
**Ivy-Overlap Net Prices Are Equal to Prices for All Other Comparable Schools After Accounting for Institutional Characteristics: On Average, Actual Prices Equal Predicted Prices for Both Categories of Schools**



the study aren't identical to those in Table 1, they likely overlap considerably. Using a base average annual income of \$50,000, a five percent increase in earnings, and a ten percent real interest rate yields an estimated value added from attending "elite" schools of about \$25,000. In view of the relatively small tuition premium for quality, going to the best school that one is admitted to is likely to be a worthwhile investment.<sup>27</sup>

The wealth of the student body has a positive effect on average price and is highly significant. Schools with rich students are able to charge higher average prices. Once again, when the sample includes public schools, being public has a large and statistically significant negative effect of about \$8400. The other major results are unaffected by including public schools.

#### **Section V - Robustness of Results**

The result that there is not a statistically significant effect from the Overlap conduct on average price but that there are several other reasonable and statistically significant influences on average price is a robust one. In addition to the estimations already described, the most important checks for robustness included:

##### **a. GLS**

If one is willing to specify structural stability of coefficients and a covariance structure for  $\text{Cov}(\epsilon_{it}, \epsilon_{it}^*)$ , we can reestimate (1) by GLS. Imposing the restriction that errors across the same school are equi-correlated and that errors across different schools are independent, we reestimated (1) by GLS. The results are very similar to those reported in Table 6. The

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27. Rothschild and White (1992) reach similar findings for professional schools. The calculation in the text shows that, all else equal, one should go to the best private school to which one is admitted. It does not address the question whether returns from private schools justify their significantly higher costs compared to public institutions.

estimate of  $\rho$  was around .8.<sup>28</sup>

The estimate by GLS of (1) is a random-effects model. We can also estimate (1) by adding a fixed-effects dummy variable for each school. In such a fixed-effects model, it is obviously not possible to identify the Overlap effect separately, but it is possible to compare the coefficients on the identified coefficients to those of the random-effects model. Under the maintained assumption of the random-effects model (i.e., error orthogonality), the coefficient estimates of the random- and fixed-effect models should be the same. In fact, a test indicates no statistically significant difference in the coefficients from the two models.<sup>29</sup>

**b. Estimation On Alternative Samples**

As already reported, equations (1) and (2) were reestimated using a sample including public universities with no changes in major results. We were able to identify several instances in the data where data for successive years were identical. In some cases, this is reasonable (as, for example, for religious affiliation). In other cases, it is not. The problem was prevalent for the variables reporting financial aid information. We eliminated all such observations from the sample (though using a prior year number is probably more reasonable since the value of this variable typically changes slowly over time). Again, there was no significant change in the results.

**c. Different Specifications**

We reestimated (1) with quadratic terms for PCTACC, COMPDEG, and ENDOW. We also reestimated (1) and (2) using a log specification for the non-discrete and non-percentage variables. Again, no difference in conclusions is warranted.

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28. Assuming an AR(1) process produced a  $\rho$  of .89 again with no significant change in results.

29. See Hausman (1978).

d. Exogeneity and Out of Sample Predictions

The right hand side variables in (1) are taken as exogenous. Of all the right hand side variables, the wealth variable is the one where this assumption is most likely to fail. Since we are primarily concerned with the coefficient on Overlap, we reestimated (1) to see how that coefficient changed if we removed wealth. We also reestimated the annual equations using lagged values for wealth on the assumption that current tuition and wealth several years prior would be less correlated than those same variables measured simultaneously.<sup>30</sup> Moreover, we performed similar experiments for some of the other variables (PCTACC, SAT). None of these experiments led us to change our conclusions about Overlap's effect.

It is possible that membership in the Overlap group should be considered an endogenous function of other  $x_{it}$  variables. The most direct way to test for the effect of this possibility is to reestimate the model excluding the possibly endogenous observations and test whether the resulting coefficients differ from those already reported. The models (1) and (2) were reestimated on a sample excluding a) the schools comprising the Ivy League plus MIT and b) the 23 schools comprising the Overlap schools. An F test was performed to see if the model that fit the sample also fit the excluded schools. This hypothesis was tested for (1) and (2) and was never rejected. These tests also provide another check (in addition to those reported above) on nonlinearities because the  $x_{it}$  variables for the non-Overlap schools are different than those for the Overlap schools, yet the predictions based on estimation using non-Overlap schools does a good job at predicting average revenue for Overlap schools.

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30. The wealth variable was statistically insignificant in regressions using gross tuition plus fees as a dependent variable. See Footnote 24. This indicates that the possible relation between gross tuition and the wealth variable is not important in explaining the results of the previous section.

## **Section VI - Antitrust, Efficiency and Non-Profits**

We now discuss whether collective action was necessary for the schools to achieve their goals and, if so, how the antitrust laws apply to these non-profit institutions.<sup>31</sup>

### **a. Was Collective Action Needed?**

There still remains the question as to why the schools engaged in Overlap conduct. The Government's reason -- namely to increase revenues -- has no empirical support. The findings are consistent with MIT's defense that Overlap was designed to enable needy students to attend Overlap schools. But why does there have to be collective action to assist needy students? Can't each school unilaterally devise its own aid policy?

MIT presented expert testimony that without Overlap, competition for star students would develop and financial aid to needy students would be reduced.<sup>32</sup> The adverse consequences of such an effect on the needy could be especially pronounced in light of recent trends in financing higher education.<sup>33</sup> Federal support for higher education has been declining sharply since its high point in the 1970's. The combined effect of reduced aid and increases in tuition has caused the real price paid per student to rise by at least 50 percent from 1975 through 1988.<sup>34</sup> To offset the decline in federal grants and aid, states and schools have expanded their awards. The data in Table 7 show that merit aid has generally become increasingly important as a fraction of institutional aid. As schools grant more aid, they grant it increasingly to meritorious non-needy students. Hence, the experts are likely correct that, in

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31. For a more complete discussion of antitrust issues, see Carlton, Bamberger, and Epstein (1995).

32. See deposition of Dr. Paul Gray, Feb. 12, 1992, pp. 130-5.

33. See McPherson and Schapiro (1991) for a detailed study of financing trends.

34. See Clotfelter (1991), Table 4.4 and *Statistical Abstract of the United States, 1991*, Tables 263 and 769.

Table 7

**Ratio of Aggregate Merit Aid to  
Need Aid by Carnegie Classification**

Carnegie Classification	Number of Schools	1984 Ratio Merit Aid to Need Aid	1989 Ratio Merit Aid to Need Aid
Research I	11	0.1467	0.1730
Research II	8	0.1880	0.1946
Doctoral I	4	0.1426	0.2139
Doctoral II	9	0.3032	0.3758
Liberal Arts I	40	0.0759	0.1313
Full Sample	72	0.1339	0.1800

Note: Based on all schools with non-missing data in 1984 and 1989.

Sources: Peterson's Annual Survey of Undergraduate Institutions and the Carnegie Foundation for the Advancement of Teaching.

the absence of Overlap, merit aid would be given and could become significant at the Overlap schools. Hence, collective action, not unilateral action, is likely necessary to prevent merit aid.

Did Overlap achieve its goal of increasing needy students' access to Overlap schools? Unfortunately, it is difficult to measure quantitatively whether Overlap did achieve its social goal and little systematic evidence was presented at trial. Ideally, one would want evidence on the family income of entrants to show that Overlap affected the income distribution of its entrants by allowing more needy students to attend. Though such income data are not available in sufficient detail to perform a study, there are data on a related variable, the percentage of the entering class that is black or Hispanic.<sup>35</sup> Although these percentages are only rough proxies for income, they should provide some indication of Overlap's effect. The data come from the same Peterson data source used earlier and are available for about 170 schools. We examine averages over the period 1984-1990 and explain percentage minority with the same variables as used earlier plus one additional variable, the percentage of the relevant minority in the state's college-age population. The results are presented in Table 8.

Column (a) in Table 8 indicates that Overlap is associated with statistically significantly higher black enrollment. The magnitude indicates that for the typical Overlap school, black enrollment is about five rather than about three percent of the entering class. When the Overlap schools are separated into non-Ivy and Ivy-plus-MIT, the magnitude and significance of the Ivy-Overlap effect drops while the non-Ivy Overlap effect becomes stronger (see column (b)). However, it is not possible to reject the hypothesis that the non-Ivy Overlap and Ivy-Overlap coefficients are identical.<sup>36</sup> Since race is a rough proxy for income, column (a)

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35. Summary income data are available for only about thirty schools that are members of the Consortium on Financing Higher Education.

36. The hypothesis that the Ivy-Overlap and non-Ivy Overlap coefficients are the same in the average tuition regressions also cannot be rejected.

**Table 8**  
**Weighted Average Regression Results, 1984-90**  
 Dependent Variable: ln(Percent Minority In School/(1-Percent Minority In School))

	Black				Hispanic			
	(1)		(2)		(3)		(4)	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
INTERCEP	-1.9655	0.9122	-1.9496	0.9168	-4.0957	0.7851	-4.0502	0.7871
OVER	0.4513	0.1722			0.1834	0.1457		
IVY			0.3957	0.2675			0.0247	0.2268
NONIVY			0.4775	0.1976			0.2583	0.1673
RSRCH1	0.3608	0.1837	0.3744	0.1909	0.2083	0.1543	0.2472	0.1602
RSRCH2	0.4840	0.2201	0.4946	0.2242	0.3156	0.1838	0.3457	0.1868
DOCTOR1	0.1193	0.2070	0.1290	0.2107	0.4173	0.1773	0.4448	0.1800
DOCTOR2	0.2879	0.1753	0.2918	0.1764	0.0767	0.1539	0.0873	0.1544
PCTACC	-0.0146	0.0046	-0.0147	0.0046	-0.0049	0.0039	-0.0050	0.0039
WEALTH	-0.0031	0.0031	-0.0032	0.0031	-0.0052	0.0026	-0.0055	0.0026
SAT	-0.0099	0.0044	-0.0098	0.0045	0.0022	0.0038	0.0027	0.0038
YDPC	-0.0235	0.0308	-0.0235	0.0309	0.0025	0.0288	0.0024	0.0288
COMPDEG	-0.0112	0.0062	-0.0113	0.0063	0.0015	0.0054	0.0011	0.0054
NONRELIG	0.1251	0.1194	0.1207	0.1208	-0.1248	0.1035	-0.1374	0.1045
ENDOW	0.0032	0.0018	0.0032	0.0018	-0.0006	0.0015	-0.0007	0.0015
LSTBLCK	0.2940	0.0599	0.2940	0.0601				
LSTHISP					0.3817	0.0453	0.3825	0.0454
N		174		174		172		172

Note: LSTBLCK and LSTHISP are the logarithms of state percentages of college-age population (18-21) of blacks and Hispanics. All other variable definitions are the same as in Table 2, except for YDPC, which is measured in thousands of dollars.



provides indirect evidence to support MIT's claim that Overlap did achieve its social goal. The other coefficients in column (a) seem reasonable, with the black population in the state being an important variable.

Columns (c) and (d) present results for Hispanics. The evidence is weaker for Hispanics than for blacks that Overlap improved access and again the non-Ivy Overlap effect is stronger than the Ivy-Overlap effect though neither effect is statistically significant. (The hypothesis of the same effect between Overlap and non-Overlap schools again could not be rejected.) Overall, the results suggest that Overlap had the greatest effect on increasing black enrollment at the Overlap schools. (An alternative interpretation is that Overlap schools have aimed significant recruiting efforts at blacks.)

**b. Antitrust Law**

If Overlap did provide needy students with increased access to the Overlap schools, then it would seem that such an effect could be relevant to MIT's defense under a Rule of Reason.<sup>37</sup> In numerous cases, the Supreme Court has not allowed profit-maximizing firms to justify their cooperative actions to set price based on the reasonableness of the price set.<sup>38</sup> Only when the collective actions generate unusual efficiencies has the Court allowed collective price setting.<sup>39</sup> Although it is possible to label the greater access of the needy to Overlap

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37. A related question is whether MIT or the Government should have the burden of proving the effect of Overlap on access of the needy to schools. In NCAA v. Board of Regents of University of Oklahoma, et al., 468 US 85 (1985), the Court ruled that the NCAA bore "a heavy burden" to prove the procompetitive effects of its action because of the elevated price and reduced output of its actions. Here the evidence does not support such overall price and output effects, so it is unclear whether MIT should bear such a "heavy burden."

38. See, e.g., U.S. v. Trans Missouri Freight Assoc.; 166 US 290 (1897), U.S. v. Addyston Pipe & Steel Co., 175 US 211 (6th Cir., 1899), U.S. v. Trenton Potteries Co., 273 US 392 (1927), and U.S. v. Socony Vacuum Oil Co., 310 US 150 (1940).

39. Broadcast Music Inc. et al v. CBS et al, 441 US 1 (1979). The Supreme Court does not characterize its decision in this way but instead says that the price action was

(continued...)

schools as an unusual efficiency and thereby fit this case within existing antitrust precedent, we think it clearer to ask the question of whether the antitrust laws leave room for a non-profit firm to use the achievement of social goals as a valid defense for collective behavior.<sup>40</sup>

The most relevant precedent is Professional Engineers, where the Court struck down an agreement by a non-profit trade association that restricted price competition for the stated purpose of assuring quality.<sup>41</sup> The trade association, composed of profit-maximizing members, promulgated restrictions on bidding to raise price and increase safety. In that case, the Court's concern was clearly that as a result of the agreement, price would be raised to all consumers. The Court suggested that any ethical rule with an overall anticompetitive effect is forbidden.<sup>42</sup>

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39.(...continued)

- "ancillary" to the production of a new product. Indeed, in other cases, the Supreme Court specifically states that it will not consider efficiency in a "price fixing" case. Such a view simply replaces the question of whether there are unusual efficiencies with the question as to what is "price fixing" and what is "ancillary". See Carlton and Klammer (1983) for the need for coordination to achieve efficiency in some industries.
40. The schools claimed that Overlap allowed them to obtain a diverse group of students. It is possible to justify the Overlap conduct on the basis of efficiency in matching. Suppose that students care about the quality of their classmates. Then given the quality attributes of each person, one can ask whether competition can achieve the optimal allocation of students to schools. The problem is similar to one posed by Koopmans and Beckman (1957) and is studied by Roth and Sotomayer (1990). (See also Telser (1978)). The result is that unconstrained competition cannot always achieve the optimal allocation. This can provide a possible theoretical justification for limitations on use of prices and for cooperative assignment of students to schools. We are unaware of any empirical attempts to test for this justification. (See Hansmann and Klevorick (1993).)
41. National Society of Professional Engineers v. U.S., 435 US 679 (1978). The Supreme Court has recognized the distinction between profit and non-profit firms in applying the antitrust laws. See, e.g., Goldfarb v. Virginia State Bar 421 US 773, 788-9, n. 17, (1975). It is unclear how much of this distinction has been preserved after Professional Engineers. See Blackmun's concurring opinion in Professional Engineers. The dissent by White and Rehnquist in NCAA explicitly recognizes the need for schools to be able to defend their conduct by non-economic goals.
42. See concurring opinion of Blackmun in Professional Engineers, who does not endorse such a suggestion.

The Court of Appeals recognized that the non-profit status of the Overlap schools could distinguish the MIT case from Professional Engineers and noted the relevance of "the absence of any finding of adverse effects such as higher price or lower output."<sup>43</sup> In particular, the Court of Appeals noted that the agreement in Professional Engineers "embodied a strong economic self-interest"; in contrast, in the MIT case, "the quest for economic self-interest is professed to be absent, as it is alleged that the Overlap agreement was intended, not to obtain an economic profit in the form of greater revenue for the participating schools, but rather to benefit talented but needy prospective students."<sup>44</sup> The Court of Appeals concluded that the district court should have considered whether MIT could justify Overlap "with some procompetitive virtue, or with a showing of Overlap's reasonable necessity to [MIT's] institutional purpose."<sup>45</sup> Accordingly, the Court of Appeals remanded the case to the district court "with instructions to evaluate Overlap using [a] full-scale rule of reason analysis" that took into account "the procompetitive and noneconomic justifications proffered by MIT."<sup>46</sup>

We believe that the Court of Appeal's finding was sensible because the Overlap schools receive their 501 c(3) status because they are presumably performing some valuable social goal not achievable through competition of profit-maximizing firms.<sup>47</sup> Collective action among 501 (c)3 institutions to achieve their goals (especially when average price is unaffected-

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43. 5 F.3d 658; 1993 U.S. App. LEXIS 23895, p. 15.

44. 5 F.3d 658; 1993 U.S. App. LEXIS 23895, p. 18.

45. 5 F.3d 658; 1993 U.S. App. LEXIS 23895, p. 15.

46. 5 F.3d 658; 1993 U.S. App. LEXIS 23895, p. 19.

47. For profit-maximizing firms and perhaps for non-profits composed of profit-maximizing members, the achievement of social goals would not seem an appropriate defense for collective price setting because the achievement of social goals is not what those firms are expected to do.

ed), seems consistent with the public policy establishing these institutions.<sup>48</sup> Indeed, if the achievement of a social goal is not a justification under the Rule of Reason for non-profits to engage in collective action, then no collective action of non-profits is likely possible under the antitrust laws, since the economists' notions of improved efficiency usually will not apply to collective action of non-profits engaged in aspects of income redistribution.

### Section VII - Conclusion

There is no statistically significant evidence that the Overlap conduct led to increases in average price paid. Instead the Overlap conduct transferred income away from meritorious high-income students to other students. The Court of Appeals found that, under the antitrust laws, it may be appropriate to allow collective action by non-profit institutions that achieves socially desirable goals.<sup>49</sup>

As a result of the Government's investigation, the last Overlap meeting was held in 1990. The District Court found MIT guilty of violating the antitrust laws in September 1992. The Higher Education Act of 1992 was passed in July granting prospective antitrust immunity for much of Overlap-type conduct.<sup>50</sup> No school that participated in Overlap meetings gave merit aid in 1992-1993 or 1993-1994. As of 1992, there were reports that several Overlap schools were considering abandoning need-blind admissions.

In September 1993, the Court of Appeals overturned the guilty verdict against MIT on the grounds that the District Court erred by ignoring the social benefits of Overlap. It ordered

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48. For a different view, see Salop and White (1991), Morrison (1992), and Carlson and Shepherd (1993).
  49. Although we believe that under the antitrust laws it is appropriate to allow the schools to set financial aid policies collectively, it is not clear that such collectively set financial aid is an optimal way for society to assure access to higher education.
  50. Discussions regarding individual students are not allowed under the legislation. The bill comes up for renewal in two years.

a new trial and instructed the District Court to use the Rule of Reason and explicitly weigh the social benefits from Overlap against any reduction in competition caused by Overlap in reaching a decision. By late fall 1993, all investigations into the conduct of other schools engaged in Overlap behavior had been dropped. In December 1993, the Government settled the case with MIT.<sup>51</sup> MIT and other schools are allowed to engage in Overlap-type behavior, including pooling of student information. Agreements not to give merit aid and to use common principles to determine aid are allowed, but discussions about individual students' financial aid are not. Audits to detect schools deviating significantly in individual aid awards from other schools are allowed. The settlement indicates that the Government did eventually recognize the special features of higher education in deciding how to apply the antitrust laws to it.

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51. Carlton presented this paper to the Department of Justice during the settlement discussions.

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