The year 2002 marked the 30th anniversary of the passage of Title IX, which prohibits discrimination by gender in any federally funded educational activity. Although the scope of Title IX includes all aspects of education, one area that has received particular attention is that of college athletics; essentially, Title IX requires that all institutions of higher education provide student access to sport participation on a gender-neutral basis. As a result, athletic opportunities for female undergraduates have expanded significantly, although not to equality with men, since 1972. For example, the female share of college athletes rose to 42 percent in 2000–2001 from only 15 percent in 1972 (U.S. Department of Education, 1997, 2003). One policy concern addressed in this paper is whether this movement toward gender equity was achieved by increasing athletic opportunities for women or by decreasing opportunities for men.

I. Title IX and the Policy Debate

With respect to intercollegiate athletics, Title IX applies to three broad areas: financial assistance to athletes; “other program areas” such as “treatment, benefits, and opportunities” for athletes; and “equal opportunity (equally effective accommodation of the interests and abilities of male and female athletes)” (Jill K. Johnson, 1994 p. 558). It is in reference to the third area that the Office of Civil Rights (OCR) developed the three-prong test that is most commonly associated with Title IX’s application to intercollegiate athletics. That is, an institution is in compliance with this portion of Title IX if: the female share of athletes is “substantially proportionate” to the female share of undergraduates; an institution has a “history and continuing practice” of expanding athletic opportunities for women; or the institution is “effectively accommodating the interests and abilities” of prospective female athletes (U.S. Department of Education, 1997 [part 5]). Although satisfaction of any one of the three prongs signals compliance with Title IX, in recent years compliance had become nearly synonymous with substantial proportionality due to a 1996 OCR policy clarification and several judicial decisions. The favored status of substantial proportionality was recently diminished in a July 2003 policy clarification issued by the Department of Education.

The first prong of substantial proportionality suggests the following measure of an institution’s compliance with Title IX:

\[ \text{proportionality gap} = \left( \frac{\text{percentage of undergraduates who are female}}{\text{percentage of athletes who are female}} \right) \times 100. \]

That is, if the proportionality gap is positive, then women comprise a greater share of undergraduates than of athletes, and the institution is said to be discriminating against female athletes. We adopt a common interpretation of the substantial proportionality standard (see e.g., Robert C. Farrell, 1995; Andrew Zimbalist, 1997; Lee Sigelman and Paul J. Wahlbeck, 1999) that a differential of no more than 3–5
percentage points signifies compliance. Using Equity in Athletics Disclosure Act (EADA) data for 741 institutions in Divisions I, II, and III, we find that compliance increased from about 7–10 percent of the sample in 1995–1996 to about 11–18 percent in 2001–2002 (allowing for leeway of 3–5 percentage points in measuring proportionality). However, by the end of the period, the vast majority of institutions, especially in Divisions II and III, remained out of compliance, with an average gap of 13 percentage points for all institutions. For more details on changes in the proportionality gap over this period, see Anderson et al. (2003).

One specific controversy regarding gender equity in intercollegiate athletics that has garnered much attention of late is the fate of men’s sports. Some opponents of Title IX claim that compliance requires the elimination of opportunities for male athletes and blame Title IX for the recent cuts in men’s sports like wrestling. In contrast, some proponents believe these cuts are caused by the escalating costs of high-profile men’s sports like football and basketball. Our research helps to address this debate by examining alternative strategies for institutional compliance with Title IX. That is, as institutions changed their athletic offerings between 1995–1996 and 2001–2002, seeking to improve gender equity in intercollegiate athletics while constrained by facilities and budgetary concerns, did schools increase opportunities for female athletes and/or decrease opportunities for male athletes? Were these adjustments made to the number of teams fielded and/or to the number of athletes per existing team?

II. Data and Descriptive Results

Our data are culled from several sources. First, the Equity in Athletics Disclosure Act mandates, beginning in 1995–1996, reporting of information by gender on undergraduate enrollment and athletic opportunities. Data for 1995–1996 were shared with us by the Women’s Sports Foundation (Don Sabo, 1997); data for 2001–2002 were obtained directly from the Department of Education. Second, the NCAA provided us with information on division membership and sponsorship of specific sports over time. Our sample includes 703 institutions: 263 in Division I, 179 in Division II, 243 in Division III, and 18 institutions that switched divisions during the period.

Table 1 reports the average change between 1995–1996 and 2001–2002 in the number of teams (panel A) and number of participants (panel B) for men and women, separately. Overall, institutions increased women’s sports by about 1 team and 27 participants. In contrast, men experienced nearly no change in teams and a very small increase of about two athletes. Results differ by division; for example, Division I added nearly twice as many female athletes and was the only division in which men experienced a net decrease in teams and participants. Note that Division I includes the largest and most prominent athletic programs with the potential for both high revenues and high expenditures. In addition, these institutions are

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1 We focus only on positive proportionality gaps as a measure of noncompliance because most institutions that are out of compliance are found to be discriminating against women (rather than against men).

2 A total of 741 institutions report athletic participation data for both 1995–1996 and 2001–2002. Of these, we exclude 26 institutions with a negative proportionality gap (because Title IX provides these institutions with different incentives for changing their behavior) and 12 institutions with missing data on tuition and fees or selectivity (control variables used in the regression, discussed later in the paper).
most likely to feel Title IX pressures due to greater media scrutiny. Finally, these average changes mask significant differences across specific sports within each gender. For example, our data demonstrate that the biggest gains for male athletes were in football, baseball, and lacrosse, while the largest losses were in tennis and wrestling. For women, nearly all sports enjoyed gains, especially soccer and rowing, while losses were negligible (Cheslock and Anderson, 2003).

III. Regression Methodology and Results

We turn now to multiple-regression analysis in order to investigate why some institutions choose different adjustment strategies (i.e., increasing and/or decreasing teams and/or participants for men and women) over time. To our knowledge, Kathleen Carroll and Brad Humphreys (2000) are the only other authors to use regression analysis to explore changes in team offerings during the 1990’s. Their paper focuses only on changes in men’s teams for an earlier period (1990–1995) using a sample including only Division I institutions; further, they do not include in their regression a direct measure of institutions’ compliance with substantial proportionality.

In addition to the participation data described above, we draw explanatory variables from various sources. First, information on institutions’ type, enrollment, and financial wealth are collected from the Integrated Postsecondary Education Data System (IPEDS). Second, data on overall giving (donations) are from the Council for Aid to Education’s Voluntary Support of Education Survey. Third, a survey conducted by the National Association of College and University Business Officers (NACUBO) yields information on institution’s endowment assets. Finally, selectivity indicators are from the 1999 edition of Barron’s Profiles of American Colleges.

We use ordinary least-squares (OLS) regression for the following dependent variables: net change in the number of male athletes, net change in the number of female athletes, net change in the number of male teams, and net change in the number of female teams. Because the focus of this paper is how pressures from Title IX impacted institutions’ decisions to add and/or cut teams or athletes for men and women, our key explanatory variable is the 1995–1996 level of the proportionality gap. We use a quadratic in this variable to allow the effect of Title IX pressures to vary by degree of noncompliance.

Other explanatory variables reflect preferences of institutions and their students, institutions’ financial ability to provide athletic opportunities for male and female students, and structural constraints. Preferences are represented by public/private control, region (South, Midwest, West, Northeast), an indicator for historically black college or university, and selectivity (four levels of Barron’s rankings). Financial wealth is measured by endowment assets per student, tuition and fee level, state appropriations per student (equal to zero for private institutions), and giving dollars per student. Finally, structural constraints include undergraduate enrollment (which represents the size of the pool of potential athletes) and athletic division (which imposes requirements for team offerings, roster size, and scholarships). For more details on the choice of explanatory variables, please see Cheslock and Anderson (2003).

Table 2 reports the regression coefficients of the proportionality gap and its square for models run separately by gender and for changes in teams (columns 1 and 2) and participants (columns 3 and 4).

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<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Changes in teams</th>
<th>Changes in participants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>Proportionality gap</td>
<td>-0.0294</td>
<td>0.0371*</td>
</tr>
<tr>
<td>(Proportionality gap)²</td>
<td>(0.0170)</td>
<td>(0.0184)</td>
</tr>
<tr>
<td></td>
<td>0.0008</td>
<td>-0.00004</td>
</tr>
<tr>
<td></td>
<td>(0.0005)</td>
<td>(0.0005)</td>
</tr>
</tbody>
</table>
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Notes: The sample includes 703 institutions. Standard errors are reported in parentheses. See text for a list of additional control variables.

* Statistically significant at the 5-percent level.
** Statistically significant at the 1-percent level.

3 To preserve sample size, we set to zero any missing values for endowment or overall giving and include in the regression indicator variables for missing information on these variables.
In both models, point estimates suggest that institutions that are further out of compliance, as measured by a large proportionality gap, are more likely to increase female athletics and decrease male athletics, all else equal. Further, the quadratic term indicates that the marginal effect for women diminishes as the proportionality gap increases, whereas it rises for men. These results are stronger for women than for men. First, considering changes in teams, the only statistically significant results are for women. Second, although results for participants are statistically significant for both genders, the positive effect for women is much larger in absolute value than the negative effect for men. For example, the marginal effect at a 5-percentage-point proportionality gap suggests an addition of 2.4 female athletes and a reduction of 1.2 male athletes. This gender difference grows with the level of noncompliance: the marginal effect at a 13-percentage-point proportionality gap is more than three times as large for female athletes (+1.8) as for male athletes (−0.5). Results are qualitatively similar when regressions are estimated separately by division (data available from the authors upon request).

IV. Conclusion

Overall, our results reveal that institutions were more likely to add female teams or participants than to cut male teams or participants in order to move closer to compliance between 1995–1996 and 2001–2002. The descriptive statistics show a slight increase in teams and athletes for men and a much larger increase in both for women. The regression results indicate a dual response to a large proportionality gap, controlling for other factors: a combination of adding female teams/athletes and dropping male teams/athletes, with a greater reliance on the former.

We believe that some losses for men’s sports are an expected or intended consequence of Title IX. That is, in an era of rising higher-education costs and unstable revenue sources, it is unrealistic to expect institutions to make all adjustments toward greater gender equity by adding female athletes; the cost of such leveling up would be prohibitive. However, some losses for male athletes may be unintended. For example, it is possible that an institution is willing and financially able to grow the size of its athletic program by adding slots for female athletes but finds it impossible to fill these slots due to lack of interest among current undergraduate women. If this institution feels bound to reach compliance via substantial proportionality and does not feel comfortable relying on the third prong (i.e., effectively accommodating the interests of female athletes), this institution might be forced to cut men’s slots to reach a gender balance in athletes.

Future work will attempt to disaggregate these intended and unintended consequences by jointly examining changes in men’s and women’s teams or participants using multinomial logistic regression. In addition, we will examine the other commonly invoked explanation for the elimination of certain men’s sports like wrestling: the “arms race” in expenditures on high-profile men’s sports like football and basketball (Cheslock and Anderson, 2003).

REFERENCES


Johnson, Jill K. “Title IX and Intercollegiate Athletics: Current Judicial Interpretation of the Standards for Compliance.” Boston

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4 Regression results including the coefficients of other explanatory variables are available from the authors upon request.


