

## SECTION 5. SCHOLARLY PRODUCTIVITY

In our review, studies that modeled scholarly productivity directly as an outcome found that, other things being the same, women faculty tend to publish less frequently than their male counterparts. Some of these differences might be explained by job selection and gender sorting by coauthors, as men and women tend to collaborate with coauthors of the same sex. With relatively few women faculty, it is more difficult for women to find collaborators.

### EVIDENCE ON PUBLICATIONS BY GENDER

Several studies in our review modeled scholarly productivity as outcomes using national data, a broad range of academic fields, and controls for experience and a number of other factors that might affect publication rates. These studies found lower scholarly output among women faculty relative to their male counterparts.

Hamovitch and Morgenstern (1977) used data from the Carnegie Council of Education to look at gender differences in the number of articles published.<sup>28</sup> They controlled for several factors, including experience (years since earning the doctorate), hours spent teaching, and number of children in the family, and found that women publish about 20 percent fewer articles than do men. They found no statistically significant relationship between publications and the number of children in the family.<sup>29</sup>

Mathtech (1999) used data from the 1991, 1993, and 1995 waves of the Survey of Doctorate Recipients to study articles published and papers presented by scientists and engineers.<sup>30</sup> After controlling for a variety of factors, including experience, academic field, kind of graduate support, marital status, number of children, and other personal characteristics, Mathtech found that women present about 1.2 fewer papers and publish about 1.4 fewer articles than do men.

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<sup>28</sup>Hamovitch and Morgenstern restricted their sample to full-time workers and criticized prior research for including part-timers.

<sup>29</sup>This finding is consistent with results reported by Cole and Zuckerman (1991), who found no difference in publication rates for single and married women.

<sup>30</sup>The Mathtech sample was restricted to doctorate recipients with eight or fewer years of experience and included individuals working outside of academia.

Sonnert and Holton (1995) used a survey of former National Science Foundation and National Research Council postdoctoral fellowship recipients to measure gender differences in scholarly productivity. They found that women in their sample had about 0.5 fewer publications than men did, a statistically significant difference even after controlling for fields.

Two studies focused on publication rates in the field of economics. Although the degree to which these results can be generalized to other fields is open to debate, these studies do shed light on differences in scholarly output between men and women faculty.

Broder (1993) measured scholarship as the number of articles published in top economics journals. After controlling for experience, quality of the graduate school attended, and quality of the employing institution, she found that female academic economists publish about 1.9 fewer articles in top journals than their male counterparts.

Koplin and Singell (1996) controlled for similar variables in their study, including quality of graduate education and current employer, but used a quality-weighted index of scholarly productivity instead of a simple count of articles published. The quality index was computed as the number of citations the journal received per article published times 1000. Koplin and Singell defined scholarly output as the sum of quality-weighted articles published. They found that, other things being the same, women's scholarly output is significantly higher than men's.

Both the Broder and the Koplin and Singell studies are significant in that they controlled for the current employment situation of individuals in their analyses. Women tend to take jobs in less-prestigious institutions and jobs that stress teaching over research (see Section 2). Thus, Broder's results imply that women tend to publish less than the men at comparable institutions do. Koplin and Singell, however, found that after adjusting for the quality of scholarship, women tend to be more productive than men at comparable institutions are.<sup>31</sup>

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<sup>31</sup>Koplin and Singell noted that the raw-publication counts in their data indicate that women publish less than men do and that their results depended on the quality index they used.

## GENDER SORTING BY COAUTHORS

We reviewed two studies that focused on gender sorting by coauthors. Both found that men and women faculty tend to publish with coauthors of the same sex. Because both studies limited their samples to economists, generalization to other fields should be done cautiously. However, the findings of these studies are significant in that they suggest that coauthoring places women at a disadvantage in publishing.

McDowell and Smith (1992) found a statistically significant propensity on the part of both male and female economists to coauthor. They also conducted a multivariate analysis of the decision to coauthor and found that women are less likely than men to coauthor. This finding, they argued, is likely the result of women finding it difficult to coauthor because of the relatively small proportion of women in the profession.<sup>32</sup> McDowell and

Smith concluded that the difficulty in finding coauthors poses a particular disadvantage for women, because their subsequent analysis showed that academic institutions tend to give single-authored and coauthored publications equal weight in promotion decisions.

Like McDowell and Smith, Ferber and Teinman (1980) used a sample of economic journal articles to show a statistically significant tendency for coauthors to collaborate with the same sex. Ferber and Teinman also analyzed journal acceptance rates from a survey sponsored by the Committee on the Status of Women in the Economics Profession. They found that when referees are blind to sex, articles submitted by women (either alone or with a male coauthor) have a significantly higher acceptance rate than articles submitted by men. However, when sex is known (or can be inferred from names), they found no statistically significant difference in acceptance rates.

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<sup>32</sup>McDowell and Smith speculated that the coauthorship problem might cause women to seek jobs in larger departments with more women in an effort to find research partners.